Master's Thesis

Enhancing Indigenous Food Security in the Arctic: Through Law, Policy, and the Arctic Council.

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Summary:

Food security has long developed since President Roosevelt determined it as the "freedom from fear and the freedom from want." The concept surrounds four pillars: availability, accessibility, utilization and stability; a failure to provide all four is likely to result in an individual or group as food insecure. Indigenous Peoples, and especially those in the Arctic region, are deemed some of the most food insecure world-wide. This is a result from constant bombardment of challenges and threats that are facing them daily, including climate change, shipping, tourism, mining, forestry, oil & gas. These threats have impacted the Indigenous way of life and their environment, leading to a shift away from traditional foods towards more store-bought foods. These changes have resulted in tremendous health impacts on Indigenous Peoples through nutrition content and food contamination. On the other hand, a number of hard and soft law mechanisms are currently in place directly and indirectly aimed to promoting and protecting food security in the Arctic and associated rights, such as the right to food and the right to culture; however, there are gaps that still remain. Suggestions to address these gaps have formulated around both legally binding and soft law mechanisms, such as an international food security treaty and using the Arctic Council as a platform for protecting and promoting food security. Regardless, Indigenous Peoples, their rights and concerns all need to be taken into account when concerning food security.

Keywords:

Indigenous Peoples Rights, Arctic, Food Security, Right to Food, Arctic Council.

Further information:

I consent the use of this Master´s thesis to the University of Lapland, the Arctic Center and the University of the Arctic.

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First and foremost, I would like to acknowledge those peoples who take the time and effort to gather their food naturally from the earth and in a safe and sustainable way. These people are the inspiration for this thesis and I write this in the hopes that they can continue these traditions and practices. Through this work, I have discovered the real importance of this food, for our bodies and health, in a world that is prone to threats and disease.

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Abbreviations

AAC – Arctic Athabaskan Council.

ACAP – Arctic Contaminants Action Program.

ACIA – Arctic Climate Impact Assessment.

AEPS – Arctic Environmental Protection Strategy.

AHHEG – Arctic Human Health Expert Group.

AIT – Assessment Integration Team.

AMAP – Arctic Monitoring and Assessment Programme.

BEAC – Barents Euro-Arctic Council.

BEAR – Barents Euro-Arctic Region.

BRC – Barents Regional Council.

CAFF – Conservation of Arctic Flora and Fauna.

CACAR – Canadian Arctic Contaminants Assessment Report.

CBD – Convention on Biological Diversity.

CEDAW – Convention on the Elimination of All Forms of Discrimination Against Women.

CESCR – Committee on Economic, Social and Cultural Rights.

COP – Conference of Parties.

CRC – Convention on the Rights of the Child.

EPPR – Emergency Prevention, Preparedness and Response.

EU – European Union.

FAO – Food and Agricultural Organization of the United Nations.

GHG – Greenhouse Gas.

HRC – Human Rights Committee.

IACHR – Inter-American Court of Human Rights.

ICESCR – International Covenant on Economic, Social and Cultural Rights.

ICC – Inuit Circumpolar Council.

ICCPR – International Covenant on Civil and Political Rights.

IIPFCC – International Indigenous Peoples Forum on Climate Change.

ILO – International Labour Organization.

IMO – International Maritime Organization.

IPCC – Intergovernmental Panel on Climate Change.

LRTAP – Convention on Long-Range Transboundary Air Pollution.

MARPOL – International Convention for the Prevention of pollution from Ships.

NGO – Non-Governmental Organization.

OSPAR – Oil Spill Prevention, Administration and Response Convention.

PAME – Protection of the Arctic Marine Environment.

POPs – Persistent Organic Pollutants.

SAO – Senior Arctic Official.

SDWG – Sustainable Development Working Group.

SOLAS – International Convention for the Safety of Life at Sea.

SPS Agreement – Application of Sanitary Phytosanitary Measures.

TBT – Technical Barriers to Trade.

UN – United Nations.

UNCLOS – United Nation Convention on the Law of the Sea.

UDHR – Universal Declaration of Human Rights.

UNECE – United Nations Economic Commission for Europe.

UNEP – United Nations Environmental Programme.

UNESCO – United Nations Educational, Scientific and Cultural Organization.

UNFCCC – United Nations Framework Convention on Climate Change.

WHO – World Health Organization.

WMO – World Meteorological Organization.

WTO – World Trade Organization.

WWF – World Wide Fund for Nature.

Introduction:

Food Security

Issues surrounding food security were extremely prominent and had widespread impacts during the Great Depression of the 1930s. Early in the turn of the century, food was sparse globally. It was noted in a report on Nutrition and Public Health in 1935 that there was an acute food shortage in poor countries because of low purchasing power and soon became the first explanation of hunger and malnutrition globally.[1] As a result, a number of countries developed nutritional policies and discussion of food security issues became further projected in the international political arena, mainly through the League of Nations, which was the predecessor to the United Nations.[2] These discussions were the beginning of further international cooperation and studies of food production internationally. Food was conceptualized differently and began to include examining food in relationship to health, economics, and politics.[3] During the Second World War, there were continued debates at the League of Nations on nutrition and food security.[4] A noteworthy debate was the Hot Springs Conference of 1943. This conference led to the creation of the Food and Agriculture Organization of the United Nations (FAO) where President Roosevelt determined food to be "the first want of man."[5] As an outcome of the conference it was solidified that food would be examined under three main categories: consumption levels and requirements; expansion of productions and adaptation to consumer needs; and facilitation and improvement of distribution.[6]

The concept of food security was born, alongside Roosevelt's well-known terms, "the freedom from want and the freedom from fear." His phrase "freedom from want" meant a secure, adequate and suitable supply of food for every man, man woman and child.[7] Roosevelt stated that "secure" referred to the accessibility of food, "adequate" referred to the quantitative sufficiency of the food supply and "suitable" referred to the nutrient content of the food supply.[8] The ultimate objective of food security at this time was to insure 'an abundant supply of the right kinds of food

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[1] Akram-Lodhi, A. Haroon, "World Food Security: A History since 1945." Canadian Journal of Development Studies/Revue canadienne d'études du développement 28.3-4, 2009, p. 6.
[2] Ibidem.
[3] Ibidem, p. 7.
[4] Ibidem, p. 8.
[5] Ibidem.
[6] Ibidem, p. 8-9.
[7] Committee on World Food Security, "Coming to Terms with Terminology: Food Security, Nutrition Security, Food Security and Nutrition, Food and Nutrition Security." Thirty-ninth Session, Rome, Italy, October, 15-20, 2012, CFS 2012/39/4, p. 4, Par. 6.
[8] Ibidem.

for all mankind.' This fostered the importance of dietary standards to guide agricultural and economic policies cultivating the diet and health of the world's population.[9] During this time food security served two purposes. Firstly, to protect both producers and consumers from uncontrolled market fluctuations in world agricultural production and prices. Secondly, to use the agricultural "surpluses" to assist economic and social development in developing countries without creating a deterrent to domestic production or disrupt local and international trade.[10]

At the World Food Summit in 1996, 53 years after the Hot Springs Conference of 1943, was the inception of the most widely used and quoted definition of food security that we have today. It is defined as, "food security exists when all people at all times have physical, social and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life."[11] This definition was officially reaffirmed at the 2009 Declaration of the World Food Summit on Food Security. Food security is represented through four pillars: availability, accessibility, utilization and stability; it is important to remember, as long as these four pillars are fulfilled, a population or individual is said to be food secure. However, if any one of these pillars are not fulfilled an individual or group is determined to be food insecure. Despite the definition becoming widely used and recognized, many groups in society who define food security in their own terms. One of these groups are Indigenous Peoples, who present an alternate definition of food security. Indigenous Peoples claim the current definitions of food security are inadequate as they rely entirely on the assessment of monetary access to market food, whereas these Peoples also consume traditional foods, which are harvested from the land.[12] Therefore, a popular argument by (Egeland et al., 2010; Power, 2008; Lambden, Receveur and Kuhnlein, 2007) states that the definitions of food security for Indigenous People should include assessment of traditional food intake and the stability of access to traditional foods.[13] It is crucial to consider all aspects pertaining to food security, including Indigenous definitions of food security, as it gives a base of understanding to develop the overall concept further.

The concept of food security has been implemented as one of the Millennium Development Goals, where it was successfully achieved by reducing extreme poverty rates in half

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[9] Akram-Lodhi, A. Haroon, "World Food Security…", op. cit., p. 3.
[10] Ibidem, p. 5.
[11] Committee on World Food Security. "Coming to Terms with Terminology: Food Security…", op. cit., p. 5.
[12] Egeland, G. M., et al., "Health disparities: promoting Indigenous Peoples' health through traditional food systems and self-determination." *Indigenous peoples' food systems and well-being: interventions and policies for healthy communities,* 2013: 9-22, p. 17.
[13] Ibidem.

as of 2010.[14] Food security is an important international topic, as food is deemed a fundamental human right for all people and necessary for survival, yet there are still about 795 million people that are going hungry globally.[15]

The Arctic region of the world is the northernmost area of the global it encompasses eight countries, Norway, Sweden, Finland, Russia, Iceland, Denmark (Greenland), Canada, and the United States. Many define the Arctic in various ways, but some common ones are the Arctic Circle, treeline, and permafrost line. There are roughly four million people living in the Arctic region,[16] of which 10% claim to be Indigenous.[17] Indigenous Peoples are identified as some of the most food insecure worldwide. According to a recent study, Inuit people of Canada where they have the highest level of food insecurity within a developed country above all other Indigenous Peoples at 68%.[18] For the purpose of this paper, I will be focusing on the food security situation of all Indigenous Peoples located in the Arctic region.

Importance for Indigenous Peoples

Before grocery stores and markets, Indigenous Peoples used their land, knowledge and surroundings to provide for their families and communities. These peoples would be considered food secure, defined using today's standards, long before the concept had been developed or a complete understanding of what it meant to be food secure. Indigenous Peoples have practiced traditional methods of food security through gathering and hunting food and have mastered this process over the course of many generations. Their perception of food reaches beyond basic survival, as it is deeply rooted in their culture and traditions. Furthermore, Ellen Woodley summarizes that their "cultural practices and traditional food systems are mutually supportive and both are vital for their food security and overall well-being."[19] Noreen Willows described traditional food as, "those culturally accepted foods available from local natural resources that constitute the

[14] United Nations, "We Can End Poverty: Millennium Development Goals and Beyond 2015." http://www.un.org/millenniumgoals/. Accessed April, 17, 2016.
[15] FAO, IFAD and WFP, "The State of Food Insecurity in the World 2015." *Meeting the 2015 international hunger targets: taking stock of uneven progress*, Rome, FAO, 2015, p. 4.
[16] The Arctic, "Population." http://arctic.ru/population/. Accessed April, 17, 2016.
[17] The Arctic Centre, "Arctic Indigenous Peoples." http://www.arcticcentre.org/EN/communications/arcticregion/Arctic-Indigenous-Peoples. Accessed April, 17, 2016.
[18] CBC News, "Inuit go hungry more than any other indigenous group: report." March, 27, 2014. http://www.cbc.ca/news/canada/north/inuit-go-hungry-more-than-any-other-indigenous-group-report-1.2588107. Accessed April, 17, 2016.
[19] Woodley, Ellen, et al., "Cultural indicators of Indigenous Peoples' food and agro-ecological systems." *SARD Initiative commissioned by FAO and the International India Treaty Council*, 2006: 1-104, p. 6.

food systems of Indigenous Peoples."[20] Dependency on this traditional food has been vital for the health, culture, food security and survival of Indigenous Peoples around the world. The diet of traditional animal fats, meat, agriculture, and berries contribute largely to the well-being of Indigenous Peoples by providing the nutritional content needed for a healthy and sustainable lifestyle. The methods of gathering and hunting requires routine physical activity in order to process the food and make it available for consumption, and allow individuals to maintain their daily exercise for a balanced lifestyle. In addition, Woodley articulates that, "traditional foods and food practices are deeply intertwined with their cultures and value systems, and play and important role in religious ceremonies and spirituality, as well as in songs, dances and myths."[21] Throughout the entire food system process, many stories are told, shared and passed on amongst many generations and families. Stories could perhaps describe in detail the connection to the land, environment, food, community, family, religion and animals. Woodley demonstrates that "ceremonies, oral traditions such as stories, songs and oral histories and other cultural practices such as reciprocity are important cultural elements in the maintenance and transmission of knowledge and practices of traditional food and agro-ecosystems."[22] Where she explains that, "the loss of cultural practices creates disconnect in the relationship between culture and traditional food systems."[23]

As the world changes, so does the livelihoods of Indigenous Peoples and their food security situation. This is eminent for those Indigenous populations in the Arctic region who are facing daily threats from climate change, such as loss of access and availability of food; human induced threats, such as pollution and environmental damage; and other sources, such as airborne contamination. It is believed that Indigenous Peoples in the Arctic are some of the most vulnerable to the threats of climate change, mainly because of their dependence on the natural environment for survival. All of these threats are having a drastic impact on the way these peoples have lived for generations. There must be creative solutions to counteract these threats and preserve food security among these peoples.

Improving food Security

In the past few decades there have been plenty of world-wide initiatives aimed at improving food security. Many are directed at the threats to food security and most specifically on the threats

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[20] Willows, Noreen D., "Determinants of healthy eating in Aboriginal peoples in Canada: the current state of knowledge and research gaps." *Canadian Journal of Public Health/Revue Canadienne de Sante'e Publique*, 2005, Vol. 96:3. S32-S36, p. S32.
[21] Woodley, Ellen, et al., "Cultural indicators of Indigenous Peoples' food...", op. cit., p. 3.
[22] Ibidem, p. 5.
[23] Ibidem.

that climate change poses. Threats to food security affect different populations in different ways and magnitudes and therefore, should be addressed in a way that caters to the specific circumstances of various demographics. There are efforts to improve food security through different measures and mechanisms, such as adaptation and mitigation, legally binding law (hard law), soft-law, and plenty of other strategies that involve many stakeholders. These efforts are carried out on the local, national and international level among all countries worldwide.

I would argue that is it most important to analyze food security from a legal perspective. In doing so, appropriate measures must be established to counteract these threats and there must be an obligation on states to protect individual and collective rights surrounding food security. Some of the rights surrounding food security include the right to food and the right to culture. These rights are protected in most instances; however, there are gaps that need to be addressed if we are to move forward. More importantly, there must be effective monitoring and reporting of food security in the Arctic. We have come a long way in defining and improving food security since the initial Health and Nutrition Report of 1935, but much more needs to be done.

Chapter 1: Prevailing Problems/Challenges in the Arctic Affecting Food Security

The Arctic is a peaceful, vast region, with an incredible biodiversity of land, people and animals that have maintained their existence there for countless generations. However, the Arctic and its population are currently threatened from a series of significant and dramatic changes occurring both inside and outside of the region. It is noteworthy to mention that they overlap and contribute to the overall level of food insecurity in the Arctic. Some threats include climate change, industrial and human activities, contamination of food supply chain, reduction of traditional foods and subsequently the increased replacement of imported or store-bought foods. They all have a wide range of effects, but most importantly; they are extremely detrimental to the Indigenous way of life. Therefore, I will describe this transformation and the effects on the land, environment, peoples, cultures, and traditions while discussing how it contributes to overall food insecurity in the Arctic.

1.1 Climate change related consequences

Chris Paci, et al. describes climate change as a, "real and significant threat to food security in the Arctic and to the existence of northern Indigenous Peoples."[24] Paci, et al. continues to describe the phenomenon by pointing out that, "climate change has grasped international

[24] Paci, Chris, et al., "Food security of northern indigenous peoples in a time of uncertainty." *3rd Northern Research Forum Open Meeting*, 2004, p. 1.

attention with the increased emissions of greenhouse gases, namely carbon dioxide (CO2), consequentially from industrial development."[25] This industrial development has elapsed, starting with the industrial boom in the 19th Century and well into the start of the 21st Century. During this time, people have begun to take notice of environmental changes and the negative effects of continuous industrial output, identifying it as not just a local problem but part of a much larger issue with far-reaching consequences. These changes, such as natural disasters and weather patterns have been well documented by Indigenous Peoples through their interactions with the land. The more that climate change continues to influence the environment, the greater the outcome on Indigenous Peoples' food insecurity. The repercussions of this phenomenon are detrimental to the four pillars of food security: availability, accessibility, utilization and food systems stability.[26] If these challenges persist, the crises in food supply, due to temporal fluctuations in food resources, is expected to be more often, longer and more intense.[27] Indigenous Peoples are suffering from a great risk of uncertainty caused by climate change, as Paci, et al. explains this is due to "the availability and predictability of traditionally harvested and consumed foods, as well as the quality and quantity of these foods being impacted."[28]

The *availability* of food is determined by the physical quantities of food that are produced, stored, processed, distributed and exchanged.[29] Physical quantities in the Arctic are constantly fluctuating with shifting seasons, temperatures and weather patterns. Variations cause unpredictability on how much or when most food will be available. Traditional food from the ground, such as berries, shrubs, and vegetables will be subject to such alterations. Hunting animals becomes a daunting task; migration patterns adjust making it difficult to track caribou, bowhead whale, fish and other bird species. Therefore, due to climate change the availability of such food sources has become unpredictable and unreliable. In which case, the trends for high market prices of food around the world is usually a reflection and determinant of inadequate availability and now these impacts are felt in the Arctic.[30] Subsequently, the FAO mentions, "with high prices of food poor people are forced to reduce their consumption below the minimum required for a healthy and active life, and this may lead to food riots and social unrest."[31] Therefore, as the availability of

[25] Ibidem, p. 3.
[26] Food and Agriculture Organization of the United Nations, "Climate Change and Food Security: A Framework Document." Rome, 2008, p. 18.
[27] Paci, Chris, et al., "Food security of northern ...", op. cit., p. 3.
[28] Ibidem, p. 1.
[29] Food and Agriculture Organization of the United Nations. "Climate Change and ...", op. cit., p. 20.
[30] Ibidem.
[31] Ibidem.

traditional foods for Indigenous Peoples is unpredictable, the dependence on store-bought food does increase.

Accessibility according to the FAO, "is a measure of the ability to secure entitlements, which are those set of resources (legal, political, economic and social) that an individual requires to obtain access to food." [32] The definition has since expanded, now recognizing both the individual and household access to food. The environment is a crucial resource for obtaining access to food in the Arctic, where changes to the environment could pose challenges to food accessibility. For example, the Canadian Inuit often use the ice to catch fish, whales, seals, and many marine mammals; when the ice retreats, their access to this food becomes limited, as the strength of the ice could be potentially hazardous. Consequently, Indigenous Peoples now have to venture further to hunt than ever before, across unpredictable terrain, which could become dangerous and costly the further they go. In northern Scandinavia the Indigenous Sami population often migrate with their reindeer during the summer and winter months to find appropriate feeding grounds for the herd. Attributing to changing weather patterns, the frequent thawing and freezing has hampered the reindeers' accessibility to food under the snow. In addition, the Sami rely on traditional food such as grouse, elk, fresh and saltwater fish, and berries; but their access to such food is changing with climate patterns.[33] It remains obvious that climate change threatens the accessibility of traditional food for all Indigenous Peoples across the Arctic.

Food *utilization* refers to the appropriate nutritional content of the food and ability of the body to use it effectively,[34] in other words the safety and social value of food. The nutritional content that the body needs to survive, high protein, vitamins, oils, natural fats and other nutrients are all found in the traditional food that Indigenous Peoples eat. A lack of this food due to limited accessibility and availability could promote the consumption of store-bought foods and lead to further health implications. Evidence indicates that warming temperatures in the Arctic can threaten the safety of food, as pathogens tend to thrive in this atmosphere.[35] Food safety is a concern throughout the whole food systems process, from of hunting the animal, to storage, cooking and ingestion. The whole process is not in a controlled environment so the risk of pathogens and bacteria in food can be significantly higher. Increase in bacteria could occur as hunters have to

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[32] A. Sen, 1989, cited in FAO, 2003a, *In: Food and Agriculture Organization of the United Nations, "Climate Change and Food Security: A Framework Document." Rome, 2008, p. 20.*

[33] Berg, Elisabeth, "Sami traditions: Márkomeannu´s contribution to the revitalization of Sami food traditions." *The Arctic University of Norway,* November, 2014, p. 32.

[34] Burke, Marshall, and David Lobell, "Climate effects on food security: an overview." *Climate Change and Food Security,* Springer, Netherlands, 2010, 13-30, p. 14.

[35] Ibidem, p. 28.

travel further to locate the food and the additional time it takes to transport it. Furthermore, many of the disease agents to which marine mammals are susceptible are of concern to human health as they can be transferred between animals and humans.[36]

Lastly, climate change can disturb the overall *food systems stability,* which is when one or more of the four components of food security is uncertain and insecure. This food systems stability refers to the overall balance of food supply and is determined by the temporal availability of, and access to, food.[37] The globalized economy we have today is highly sophisticated and has thus far manages to provide us with the necessary accessibility and availability of food. However, predictions of weather changes and increased temperatures could threaten the current food systems that are in place leading to astronomical ramifications. In recent years, there have been surges of food riots all around the world in response to the increased price and limited availability of foods. The current food systems are not dependent on the local changes anymore; instead, we are facing these vulnerabilities on the global level. Indigenous Peoples in the Arctic are experiencing the high cost of groceries from imported foods as they move away from traditional foods into a more market-based economy. These changes have an impact on human health, livelihood assets, food production and distribution channels, as well as changing purchasing power and market flows.[38] Numerous impacts overlap one another creating domino effects on different areas of the food systems. This reveals the power that climate change has over the lives of the Indigenous Peoples in the Arctic.

1.2 Increase in human activities

The Arctic has seen more human activity in recent decades than ever before. Some undertakings involve mining, oil drilling, forestry, tourism, fishing, and shipping. Multinational companies are looking towards the Arctic as the next big opportunity, but the awareness of potential effects on the population, animals and environment is paramount. Large-scale projects are taking place across the whole circumpolar north, sometimes in remote areas that are environmentally sensitive or traditional hunting grounds of Indigenous Peoples.

There are a number of concerns surrounding the mining industry. Greenpeace believes that strip mining can destroy the landscapes, forest and wildlife habitats around the mine site; rain takes the loose top-soil and can wash it into waterways which can hurt fish and other wildlife;

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[36] Burek, Kathy A., Frances MD Gulland, and Todd M. O'Hara, "Effects of climate change on Arctic marine mammal health." *Ecological Applications* 18.sp2, 2008: S126-S134, p. S132.
[37] Food and Agriculture Organization of the United Nations, "Climate Change and Food Security...", op. cit., p. 21.
[38] Ibidem, p. iii.

chemical contamination of the groundwater and especially those used by local residents; as well as noise pollution and dust from machinery.[39] The consequences of mining can have dangerous impacts on Indigenous food sources. The loss of wildlife habitat is an obvious and common concern with industrial activity and motorized vehicles posing a hazard to nearby animals. Animals and humans alike can easily digest chemicals and heavy metals in the water supply. Noise could potentially disrupt wildlife causing nearby species to migrate further, forcing Indigenous Peoples to travel a greater distance to hunt or find new hunting grounds all together.

Oil and gas projects are increasing their attention to the region, where according to the United States Geological Survey;[40] the Arctic is to account for approximately 13% of undiscovered oil and 30% of undiscovered natural gas. Oil and gas activity is reason for concern and expressed internationally by advocates against such development. According to the World Wide Fund for Nature (WWF), there are a number of concerns surrounding the oil and gas industry. Some include, ineffective clean up methods in the instance a spill does occur, noise can injure marine animals as they use sound to navigate the ocean to find food, and both drilling and production can disturb the fish and other animals which have both an economic and food value.[41] In addition, Mark Nuttall explains that, "polar bears, seals, sea otters and sea birds are already frequent casualties of oil contamination, while bowhead whale migration routes through oil and gas lease areas in the Chuckchi Sea could be seriously disrupted if development goes ahead."[42] Any of the above changes can affect the food position of nearby Indigenous communities.

Forestry is a prominent industry in Norway, Sweden, Finland and Russia; however, if we define the Arctic as the area above the treeline, then it is safe to say that forestry does not exist in the Arctic. Regardless of how the Arctic is defined, forestry does have an impact on Arctic Indigenous Peoples and their food security. In Finland and Sweden, forests comprise of 74% and 60% of the total land area respectively.[43] In Finland, according to the FAO, forestry accounted for four percent of the gross domestic product (GDP) and the highest among developed countries in

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[39] Greenpeace International, "Mining Impacts." April, 15, 2010, http://www.greenpeace.org/international/en/campaigns/climate-change/coal/Mining-impacts/. Accessed April 1, 2016.
[40] U.S. Geological Survey, "90 Billion Barrels of Oil and 1,670 Trillion Cubic Feet of Natural Gas Assessed in the Arctic." July, 23, 2008, http://www.usgs.gov/newsroom/article.asp?ID=1980#.VxcG8aPyXIU. Accessed April, 17, 2016.
[41] World Wide Fund for Nature, "Arctic Oil and Gas." http://wwf.panda.org/what_we_do/where_we_work/arctic/what_we_do/oil_gas/. Accessed April, 1, 2016.
[42] Nuttall, Mark, "The Arctic is changing." *Stefansson Arctic Institute and individual authors*, 2000, p. 1.
[43] Baldursson, Snorri, "Module 10: Living Terrestrial Resources of the Arctic and Their Use." *University of the Arctic,* p. 8.

Europe.[44] In these four countries, forestry has become a much more sustainable after many decades of practice. However, despite increased sustainable practices, there is no denying that it has a considerable influence over the local environment. The Sami are local Indigenous Peoples of Norway, Sweden, Finland and Northwestern Russia, who often use the land and environment for their traditional hunting, gathering and cultural practices. Resulting in a number of disagreements between the forest industry and the local Sami people over the effects of forestry related activities on their livelihoods.[45] The reason for such disagreements arise because many Sami traditional activities heavily rely on the forest environment. For example, reindeer use the areas for food such as lichen or tree-hanging lichen and the Sami take their reindeer to specific locations in the forest to graze, especially during the winter months.[46] Furthermore, these herding areas consists of coniferous forests and are heavily exploited by the forestry industry.[47] Many companies are focused on the commercial objects and may or may not realize the impacts they are having on the Indigenous way of life through such activities. The forests are not only used for herding but all across the Arctic a great source of food comes from this environment, including traditional foods such as berries, herbs, shrubs, lichen, moose, caribou, lynx, and wolverine.

Shipping has increased drastically in the Arctic as the sea ice continues to retreat progressively each year. The Northern Sea Route Information Office has started recording the number of transits across the Northern Sea Route; in 2011, they recorded 41 vessels, while in 2013 it reached a peak of 71.[48] Both Arctic shipping routes; the Northwest Passage, through Canada's archipelago; and the Northern Sea Route, north of Russia, are believed to have substantial time and cost savings for international shipping companies. These routes are estimated to save hundreds of thousands of dollars each year in terms of cost savings and time. Charlotte McDonald-Gibson quotes Ron Sallet, a manager in Rotterdam for the Cosco Group determining that, "ships can save about 12 days in their journey by using the Northern Sea Route and therefore, saving on both fuel and money."[49] However, some Indigenous Peoples use the coastal areas for fishing, hunting, and

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[44] Lebedys, Arvydas and Yanshu Li, "Contribution of the Forestry Sector to National Economies, 1990 – 2011." *Food and Agriculture Organization of the United Nations*, Rome, 2014, p. 35.
[45] Lawrence, Rebecca and Kaisa Raitio, "Forestry conflicts in Finnish Sapmi: Local, National and Global Links." *Indigenous affairs* 4, 2006.
[46] Ididem, pp. 1-2.
[47] Association of World Reindeer Herders, "Sami & Finns – Finland." *Reindeer Herding: A virtual guide to reindeer and the people who herd them*. http://reindeerherding.org/herders/sami-finns-finland/. Accessed April, 1, 2016.
[48] Northern Sea Route Information Office, "Transit Statistics." http://www.arctic-lio.com/nsr_transits. Accessed April, 1 , 2016.
[49] McDonald-Gibson, Charlotte, "The shipping forecast – it'll be colder but much, much quicker: New Arctic shipping route saves up to two weeks' travel between Asia and Europe." *The Independent,* September, 11, 2013, http://www.independent.co.uk/news/world/europe/the-shipping-forecast-it-ll-be-colder-but-much-much-quicker-new-arctic-shipping-route-saves-up-to-8810085.html. Accessed April, 1, 2016.

economic benefits, and they could be effected by the surge in Arctic shipping. This activity could have grave consequence on the marine environment, especially disruptions to natural mating and migration patterns. In turn, Indigenous Peoples who rely on the marine ecosystem for food and traditional practices will be at a loss. Amplified traffic could witness minor discharges from marine vessels, such as tankers, freighters, fishing boats and coastal ferries, in which they may not be readily monitored, but their impression on Arctic ecosystems may be substantial nonetheless.[50] The discharge mentioned refers to the ballast water that ships use to balance the load of the ship. This water could be gathered from the south and dispersed in the north, causing invasive species. Although the outcomes of invasive species are still being researched, Lisa Palmer believes, "shipping is by far the most common pathway for marine invasive species, responsible for 69 percent of species introductions to marine areas."[51] Decreases of ice and increase of shipping could alter the marine ecosystem balance in the Arctic. Ships have struck whales, a common food for Inuit Peoples, resulting in many deaths and affecting the conservation of food security in the Arctic.[52]

Lastly, tourism is starting to make its way north, as individuals aim to explore the relatively unexplored. Similar to increased shipping, ferries and other ship traffic carrying tourists are likely to have the risk of vessel accidents, spills, pollution discharge and therefore a likely blow to the Arctic environment. Tourism is also a very new and real threat in the Arctic. The use of helicopters and planes for recreational purposes can produce disturbing noise for seabirds, subsequently causing panic flights, leading to the egg loss.[53] Bird eggs are a food source in summer months, as Inuit usually go out and collect them during the spring.[54] In addition, sports fishing and hunting has gained popularity in the arctic, but frequently puts pressure on resources and leads to conflicts between local and visiting hunters.[55] Overall, a surge in tourism means a rise in garbage and waste, exclusively in an area where decomposition is slow and waste remains visible on top of the permafrost for many areas.[56]

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[50] Nuttall, Mark, "The Arctic...", op. cit., p. 1.
[51] Palmer, Lisa, "Melting Arctic Ice Will Make Way for More Ships and More Species Invasions." *Scientific American,* March, 6, 2013, http://www.scientificamerican.com/article/melting-arctic-sea-ice-means-more-shipping-and-more-invasive-species/. Accessed April, 1, 2016.
[52] Robards, Martin, "Resilience of international policies to changing social-ecological systems: Arctic shipping in the Bering Strait." *In: Arctic Resilience Interm Report 2013, Stockholm Environment Institute and the Stockholm Resilience Centre, p. 100.*
[53] Snyder, John, "Tourism in the polar regions: the sustainability challenge." *UNEP/Earthprint,* 2007, p. 15.
[54] Virtual Museum of Canada, "Inuit: land and Sea – Hunting and Fishing for Food in the Arctic. *Canadian Museum of History*, 2000, http://www.virtualmuseum.ca/edu/ViewLoitDa.do;jsessionid=41D44DE5182820F3966F4BA 092D4F5C3?method=preview&lang=EN&id=10896. Accessed April, 20, 2016.
[55] Snyder, John, "Tourism in the polar regions...", op. cit., p. 15.
[56] Conservation of Arctic Flora and Fauna, "Arctic Flora and Fauna: Status and Conservation." 2001, p. 102, Box 36.

Climate change has amplified human activities in the Arctic there is no denying it. Mining, oil and gas, tourism, and shipping are a few of the growing human activities that are placing additional pressure on the environment. These actions also contribute to a further imbalance of the ecosystem and environment, contributing to food insecurity of the Indigenous Peoples.

1.3 Contamination of food supply chain: the resulting consequences of overall challenges

Contamination of the food supply chain in the Arctic is triggered by a variety of different sources. Jay Van Oostdam, et al. indicates that, "some contaminants of primary concern among traditional foods in the Canadian Arctic are: persistent organic pollutants (POPs), polychlorinated biphenyl (PCBs), chlordane and toxaphene, the toxic metal mercury and naturally occurring radionuclides,"[57] all of which can be detrimental to one's health. The Inuit, for example, have a traditional diet that depends on the marine mammals and resources.[58] Marine mammals rely on their fat for energy and insulation for the cold climate and sadly, this is where many of the contaminants reside.[59] Not to mention, these contaminants become concentrated further along the food chain, through which they can reach very high and dangerous levels.[60] This undoubtedly poses a problem for Indigenous Peoples as they are highest on the food chain and a significant portion of their diet consist of marine mammals that could contain dangerously high levels of contaminants. This issue is prevalent across the whole Arctic and not only confined to Canada's North. Similar cases were reported in Northern Europe where cross-border contamination has collided with Indigenous Peoples. For example, smelter emissions from nickel and copper processing in Zapolyarnyy, in the Kola Peninsula region of Russia, were harming Norway and Finland's northern forests.[61] Relevant studies by the Government of Canada had detected contaminants in the air, water, animals, plants and people in the Arctic were of much higher levels than expected in a non-industrial region; where a particular concern was placed on the traditional food of Indigenous Peoples.[62] However, it is important to mention that food-chain contamination by various chemicals and substances travel long distances and are not easily observed or detected by conventional

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[57] Van Oostdam, Jay, et al., "Human health implications of environmental contaminants in Arctic Canada: a review." *Science of the Total Environment* 351, 2005:156- 246, p. 234.
[58] Inuit Circumpolar Council – Canada, "Food Security across the Arctic." *Background paper of the Steering Committee of the Circumpolar Inuit Health Strategy*, May, 2012, p. 7.
[59] Ibidem, p. 8.
[60] Ibidem, p. 7.
[61] Myking, Tor, et al., "Effects of air pollution from a nickel-copper industrial complex on boreal forest vegetation in the joint Russian-Norwegian-Finnish border area." *Boreal environment research,* 14.2, 2009, p. 279.
[62] Government of Canada, "Making International Environmental Agreements Work: The Canadian Arctic Experience." *Report of the Commissioner of the Environment and Sustainable Development*, 1999, par. 6.51.

means.[63] Therefore, proper monitoring and detection mechanisms need to be in place to protect the health of Indigenous communities. Van Oostdam, et al. addresses, "that in most cases, communities were alerted to the possibility of food-chain contamination only from reports of animal tissues laboratory results, which were sometimes obtained for purposes not even directly related to local food safety concerns."[64] The health effects of food supply-chain contamination has been monitored for many decades and Indigenous populations ultimately takes the brunt of these consequences from the overall contamination.

Among all of the contaminants, Van Oostdam, et al. believes mercury is the toxic metal of greatest concern in the Canadian Arctic.[65] Jason Stow, et al. refers to the 2002 AMAP Health Assessment when discussing the potential toxic effects of Mercury (Hg) on the human body; effects include reproductive, immune and neurological systems through several different forms.[66] In addition, the more recent AMAP 2009 Assessment now claims that mercury can also have adverse effects on the cardiovascular system.[67] It is well documented that Indigenous women, especially Inuit, have high levels of contaminants in their bodies. In northern Canada, the levels of contaminants in blood and breast milk, especially among Indigenous mothers, are found to be higher than anywhere else in the world.[68] Furthermore, these mothers have and number of comparable contaminants (such as: oxychlordane and trans-nonachlor) that are found to be 6–12 times higher than those non-indigenous; similarly with other chemicals (for example: PCBs, HCB, mirex and toxaphene.)[69] However, determining the adverse human health effects of contaminated traditional food poses great challenge. There are many factors contributing to the overall health of an individual; in fact, contaminants play a modest role in determining an individual's health status.[70] Other factors include lifestyle (e.g., alcohol consumption, smoking, and substance abuse), diet, socioeconomic status and genetic predisposition need to be considered when evaluating the results in this report.[71] Indigenous Peoples have been consuming traditional foods for hundreds of years, and only recently become the victims of such health consequences.

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[63] Van Oostdam, Jay, et al., "Human health implications…", op. cit., p. 222.
[64] Ibidem, p. 223.
[65] Ibidem, p. 234.
[66] AMAP 2002 Health Assessment *in: Stow, Jason, et al., "What is the impact of mercury contamination on human health in the Arctic." AMAP Assessment 2011: mercury in the Arctic,* 2011:159-170, p. 165.
[67] 2009 AMAP Human Health Assessment *in: Stow, Jason, et al., "What is the impact of mercury…", op. cit., p. 165.*
[68] Inuit Circumpolar Council – Canada, "Food Security across the Arctic." *Background paper of the Steering Committee of the Circumpolar Inuit Health Strategy*, May, 2012, p. 8.
[69] Van Oostdam, Jay, et al., "Human health implications…", op.cit., p. 232.
[70] Ibidem, pp. 231-232.
[71] Ibidem, p. 232.

One important consequence of the overall challenges to food contamination is the communication of findings to Indigenous Peoples' communities, between traditional knowledge (TK) and western scientific research. To detect food contamination, a reliance is usually placed on western scientific knowledge by using high tech instruments to gather the data. Although it is not entirely impossible to get the same results with traditional knowledge or by other means, but it can be much more difficult. According to the World Intellectual Property Organization, TK is considered to be "the knowledge, know-how, skills and practices that are developed, sustained and passed on from generation to generation within a community, often forming part of its cultural or spiritual identity."[72] Indigenous Peoples mainly practice this form of knowledge all over the globe. Studies concerning food contamination are not properly communicated at the local level, repeatedly leading to misunderstanding of what is safe and eatable and what is not. This is worrisome for Indigenous Peoples, as they have never faced such significant diet change and contamination risks before. Where some food risks have been identified as strongly influential on the perception and acceptance of risks among the public and perhaps more so the Indigenous.[73] Many have expressed, Van Oostdam, et al., Slovic (1987), Douglas (1986), Pidgeon et al. (1992) that some risks include: "involuntary exposures to the hazards, uncertainty about probabilities or consequences of exposure, lack of personal experience with the risk (fear of the unknown), effects of exposure delayed in time, genetic effects (effects on the next generation), accidents related to anthropogenic activity, unequal distributed risks and benefits, and the ease of perception of the associated benefits."[74] Although these factors were identified over 20 years ago, the same uncertainties remain, and because of the changing environment when one hazard is understood, another may arise.

This uncertainty could be exposed by a gap in communication and the lack of clarity between traditional knowledge and western scientific knowledge regarding food contamination. This miscommunication can happen at both ends of the spectrum, where it is widely understood that the public does not see risk in the same way as technical experts.[75] It was examined by C. M. Furgal, S. Powell, and H. Myers that, "given the central importance of food to the Indigenous society even today in the North, understanding and developing ways to better communicate information on contaminants, traditional foods, and health is critical."[76] Van Oostdam, et al.

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[72] World Intellectual Property Organization, "Traditional Knowledge." http://www.wipo.int/tk/en/tk/. Accessed April, 4, 2016.
[73] Van Oostdam, Jay, et al., "Human health implications...", op. cit., p. 222.
[74] Ibidem.
[75] Ibidem.
[76] Furgal, Chris, Stephanie Powell, and Heather Myers, "Digesting the message about contaminants and country foods in the Canadian North: A review and recommendations for future research and action." *Arctic,* 2005: 103-114, p. 111.

suggests that, "a much more effective risk management processes, through decisions and communications are helpful in minimizing anxiety, building trust, and to avoid negative repercussions (e.g., confusion misperception, rejection of advice, mistrust, and introduction of exposure to indirect risks)."[77] Most importantly, Van Oostdam, et al. dissects that "communication efforts must incorporate Indigenous knowledge and participation on the nutritional benefits and risks associated with the consumption of both traditional and imported foods, but more specifically on the importance of a traditional lifestyle to overall health and well-being."[78] Further claiming that, "the benefits of such efforts will provide Indigenous Peoples with the appropriate information to make more informed decisions about harvesting and consumption of both traditional and imported foods, but also to avoid some of the mistakes of earlier communication efforts related to environmental contaminants."[79] The gaps must be filled on both sides in order to properly communicate and address the risks of food contamination, cross-culturally. Ways to improve may involve education and a comprehensive understanding for expectations. One program directed at closing this gap is the Canadian Northern Contaminants Program (NCP), a government initiative aimed at reducing or eliminating contaminants in traditional foods, and to provide information on contaminants to individuals and communities.[80]

Inuit leaders are strong advocates by presenting and talking at public forums on traditional foods. However, their concept of secure food differed from the concept held by people in academia and government, who tended to talk of nutritional value and purchasing power when referring to the same subject. Carolina Behe, the Indigenous knowledge and science advisor for the Inuit Circumpolar Council – Alaska, said it was if "they were talking two different languages."[81] This was demonstrated at a meeting four years ago, she recalled, someone asked whether the Inuit were looking forward to increase shipping because it would create more opportunity to move in food. Behe explains, "our people were saying the exact opposite: We're really concerned about these ships because they're going to disrupt our hunting, the noise is disrupting the animals, the pollutants, and that's a threat to food security."

1.4 Reduced supply of traditional food: safety and contamination

[77] Van Oostdam, Jay, et al., "Human health implications...", op. cit., p. 222.
[78] Ibidem, p. 234.
[79] Ibidem.
[80] Government of Canada, "What is the Northern Contaminants Program?" *Minister of Indian Affairs and Northern Development and Federal Interlocutor for Métis and Non-Status Indians,* Ottawa, 2008, p. 1.
[81] Joling, Dan, "Alaska's Inuit link steady food supply to environment." *The Associated Press*, December, 28, 2015. http://www.cbc.ca/news/canada/north/alaska-inuit-link-food-supply-environment-1.3382092. Accessed March, 25, 2016.

There have been noticeable changes in food supply owing to high levels of contamination. Very few studies have specifically indicated a reduction in the traditional food supply, but it could be assumed. Food contamination creates a number of safety issues for both animals and humans in the food chain. As mentioned previously, contamination becomes exceedingly concentrated higher in the food chain, meaning plankton and shrimp will have significantly less than polar bears and humans. Contamination levels among species in the Arctic are of different variations.

For example, Eider ducks are one species that displayed a population decline over the past few decades, according to Robertson and Gilchrist.[82] The reasons are determined, "primarily to parasites, where contaminants may be partly responsible, as high levels of cadmium and mercury were found in their liver and kidneys which had possible impacts on the ducks' immune system."[83] In addition to ducks, birds have relatively small bodies, where if they feed exclusively on contaminated fish, their body can quickly reach toxic levels that can kill chicks, destroy eggs or cause deformities.[84] Bird eggs are a source of nutrition for Indigenous Peoples during the summer months, and the contamination and reduction of such species could have an influence on nearby communities.

Animals at the top of the food chain, such as beluga whales, could have mercury levels in their organs that are high enough to cause damage, especially in brain function.[85] Contaminants could really dictate how these animals function in the Arctic environment and how they communicate with one another, which may be detrimental to their survival. A separate study in collaboration between scientists from Aarhus University and the University of Copenhagen, along with colleagues in Canada and the United States, focused on the effects of toxins on polar bears. Kristian Sjogren says that, "the study demonstrated how perfluorinated compounds, which have been used to treat industrial and commercial products for decades, disturb different signal molecules and enzymes in the bears' brains."[86] Polar bears are at the mercy of a good memory and sharp senses when navigating their surroundings. There are two systems that control the bears' behaviour

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[82] Robertson and Gilchrist 1998 *In: Thompson, Shirley. "Sustainability and vulnerability: Aboriginal Arctic food security in a toxic world." Breaking ice: Renewable resource and ocean management in the Canadian North,* 2005: 47-69, p. 59.
[83] Wayland et al., 2001, *In: Thompson, Shirley. "Sustainability and vulnerability: Aboriginal Arctic food security in a toxic world." Breaking ice: Renewable resource and ocean management in the Canadian North, 2005: 47-69, p. 59.*
[84] Elert, Emily, "U.S. Food Still Tainted with Old Chemicals." *Environmental Health News*, April, 22, 2010. http://www.scientificamerican.com/article/chemical-tainted-food/. Accessed March, 26, 2016.
[85] Canadian Arctic Contaminants Assessment Report II, "Contaminant Levels, Trends and Effects in the Biological Environment," Ed. by A. Fisk, K. Hobbs, and D. Muir. *Ottawa: Department of Indian Affairs and Northern Development*, 2003, p. 92.
[86] Sjogren, Kristian, "Chemical pollution is causing brain damage in polar bears." *Science Nordic*, March, 15, 2015. http://sciencenordic.com/chemical-pollution-causing-brain-damage-polar-bears. Accessed March, 26, 2016.

and are involved in everything from mating to searching for food, the nervous system and hormonal system, which control the animal's organ functions including the liver, kidneys, lungs, heart, muscles, and genitals.[87] Polar bears are the most superior Arctic animal on the food chain and important for sustaining the balance of the food systems in the region, so it is vital that their brain is functioning free of dangerous contamination. Sjorgen explains that, "it may ultimately impact on the polar bears' behaviour, hormonal balance, and their ability to survive in an already hostile environment."[88] The effects of toxins on animals and their brain function could have detrimental consequences to the ecosystem balance.

Reflecting on migratory and long-range POPs, they usually take up semi-permanent residence in the fat tissues of organisms.[89] Emily Elert explains that, "for animals, and sometimes humans, such contaminants can raise the risk of cancer and other diseases that alter hormones, reduce fertility or disrupt brain development."[90] Any of these effects on animals, especially reduced fertility, could extend to a reduction of food supply in the Arctic. Discovering pollutants in animals caught with the intent to consume has been a challenge for Indigenous Peoples. If there are no obvious signs of contamination, it becomes a safety issue. There are obvious indications in reduced traditional food supply, particularly in those safe to consume. Moreover, a knowledge of the potential risks associated with contaminants may turn people away from traditional foods, even when they represent the healthiest food choice. The outcome, explained by Stow, et al., "can lead, among other things, to a degradation of cultural identity, economic stress arising from the high cost of healthy store-bought foods, and potential nutritional deficits arising from the consumption of poor quality store-bought foods."[91] A reduced traditional food supply, among other factors have contributed in the movement towards store-bought, "western foods," and away from traditional or "country foods." A trend that has spread across the Arctic region in the last few decades.

1.5 Replacement of traditional food through imported food: the consequences of consumption

A phenomenon for Indigenous Peoples in the Arctic has been the shift away from traditional foods towards more store-bought foods. James D. Ford notices, "that over the past 50 years, store-bought or 'southern foods' have played an increasingly important role in the diet of

[87] Ibidem.
[88] Ibidem.
[89] Elert, Emily, "U.S. Food Still Tainted with Old Chemicals." *Environmental Health News*, April, 22, 2010. http://www.scientificamerican.com/article/chemical-tainted-food/. Accessed March, 26, 2016.
[90] Ibidem.
[91] Stow, Jason, et al., "What is the impact of mercury contamination on human health in the Arctic." *AMAP Assessment 2011: mercury in the Arctic*, 2011: 159-170, p. 164.

Canadian Inuit at the expense of traditional foods."[92] As many go on to speculate, Ford (2009), Kuhnlein et al. (2004), Kuhnlein and Receveur (2007), Poppel et al. (2007), "for younger generations, the store often represents their main source of food as part of the 'nutritional transition'."[93] Furthermore, Paci, et al. describes that, "the rate at which these store-bought foods have been acculturated and assimilated into northern Indigenous lives, has been done at various speeds and intensities."[94]

Traditional food is gathered from the land or the sea; such as berries, seal, caribou, whale, etc. which varies in all areas of the Arctic and Indigenous Peoples. Store-bought food is categorized as fruits, vegetables, boxed and canned goods transported long distances and purchased at local stores. This is a common concern for many Indigenous Peoples as this largely transforms their health, well-being, livelihood and food security.

This shift is occurring in the Arctic for numerous reasons and Ford best addresses this through a study on Igloolik, Nunavut.[95] Whereby, Ford describes the cause and effect relationship between traditional food and store-bought food in this community. For example, if Indigenous Peoples cache no walrus meat for future use or an increase in wage labor, the result will be an increase of store-bought food. In addition, a decrease of overall traditional food access and/or if the distance to caribou is farther that usual, there will be greater time and gas used, and likely the same result in attraction to store-bought food. This revision of food, as demonstrated in the diagram Fig. 7, has a distinct cause and effect relationship.[96] The purchase of store-bought food influences household income in multitudes, because there is a financial decrease from the high cost of this food, in a general overall comparison with traditional food. As shown by, Sheehy, T 2015, Erber et al. 2010b, and Hopping et al., 2010, "prior research indicates that store-bought foods used most frequently in Arctic communities are of low nutritional quality, which negatively affects overall diet quality."[97] Non-nutrient-dense foods are those considered to be high in fat and sugar[98] and consist of the single largest source of total energy intake (33%) amongst traditional eaters. [99] Above all else,

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[92] Ford, James D., "Vulnerability of Inuit food systems to food insecurity as a consequence of climate change: a case study from Igloolik, Nunavut." *Regional Environmental Change 9.2*, 2009:83-100, p. 85.
[93] Ibidem.
[94] Paci, Chris, et al., "Food security of northern indigenous peoples in a time of uncertainty." *3rd Northern Research Forum Open Meeting*, 2004, p. 4.
[95] Ford, James D., "Vulnerability of Inuit food systems...", op. cit., p. 93, Fig. 7.
[96] Ibidem.
[97] Sheehy, Tony, et al., "Traditional food patterns are associated with better diet quality and improved dietary adequacy in Aboriginal peoples in the Northwest Territories, Canada." *Journal of Human Nutrition and Dietetics* 28.3, 2015: 262-271, p. 1.
[98] Ibidem.
[99] Ibidem, p. 7, Table 4.

it is believed that the ability to hunt will deteriorate, resulting in a steady decline of traditional food access and availability.[100] This cause and effect relationship couple with the shift away from traditional foods is a viscous cycle and a potential downward spiral for many Indigenous Peoples and their communities.

The tendency is to buy the cheaper "junk" foods, which have longer expiry dates in comparison to the short shelf-life produce of other healthier foods. Healthier foods, such as vegetables, can only be transported by costly airfreight, whereas perishable goods are transported by barge largely reducing the cost.[101] This makes for a concerning situation when the weather turns bad and hampers the shipments of supplies and food for long periods. Therefore, Indigenous Peoples have moved away from being solely dependent on themselves and the environment, to being heavily reliant on others; leaving them in a very vulnerable position concerning the future of traditional food.

One important outcome of heavy reliance on store-bought foods are the severe health consequences recorded among Indigenous populations, that stems from the quality of the food. Ford (2009), Young (1996) Kuhnlein et al. (2004) Kuhnlein and Receveur (2007) all explain that, "this trend– combined with youth preference for nutrient poor, high sugar and fatty store produce, and high prices for fresh fruit and vegetables in the North—has had far reaching health implications with rising levels of obesity and diabetes reported in northern communities."[102] Before the consumption of store-bought foods, obesity and diabetes were not common among Indigenous Peoples. The Arctic Athabaskan Council articulates this best by recording, "that when they are unable to obtain food through traditional means of hunting, fishing and gathering, they must supplement their diet with purchased food, which is associated with an increased prevalence of chronic diseases such as cancer, obesity, cardiovascular disease and diabetes."[103] Kuhnlein et al. comprehensively states that, "many of the studies conducted in the Canadian Arctic confirm that decreasing country food in the diet is likely to have negative health consequences in part through a corresponding increase in total fat, saturated fat and sucrose consumption above recommended levels, a lower intake of the vitamins A, D, and E, riboflavin and B6, as well as a decreased use of the important minerals iron, zinc, copper, magnesium, manganese, phosphorus, potassium, and

[100] Ford, James D., "Vulnerability of Inuit food systems...", op. cit., p. 93, Fig. 7.
[101] Mead, Erin, et al., "Impact of the changing food environment on dietary practices of an Inuit population in Arctic Canada." *Journal of Human Nutrition and Dietetics 23.s1*, 2010: 18-26, p. 23.
[102] Ford, James D., "Vulnerability of Inuit food systems...", op. cit., p. 85.
[103] Arctic Athabaskan Council, "Petition to the Inter-American Commission on Human Rights Seeking Relief from Violations of the Rights of Arctic Athabaskan Peoples Resulting from Rapid Arctic Warming and Melting Caused by Emissions of Black Carbon by Canada: Summary of the Petition." April, 23, 2013, p. 5.

selenium."[104] Tony Sheehy notices that, "diet quality and dietary adequacy were better among Inuvialuit adults who consume more traditional foods."[105] This paints a vivid picture of the reality and health consequences of the changes. Although many of the health studies related to food have been conducted in Canada, many Indigenous Peoples across the Arctic are facing the same problems. Sheehy further suggests that, "efforts for improving dietary adequacy in Indigenous populations should emphasise the use of traditional foods, as well as the improved availability of and access to store-bought foods of high nutritional quality."[106]

Kuhnlein, Harriet V., et al. reflects that, "before colonial contact in the Americas, Indigenous Peoples had 100% of their dietary energy from their [traditional food] resources," an almost imaginable amount in today's terms. Continuing that, "this pattern persisted in the Canadian Arctic until the advent of Hudson's Bay stores at the turn of the twentieth century. The result is astronomical where, where today only 10–36% of adult dietary energy is derived from [traditional foods]."[107] It is extremely likely that these numbers have decreased even further over the past six years, but still indicate a dramatic change in Indigenous diet. Even though the percentage of consumed traditional food may vary, it is safe to say this phenomenon is taking place right across the whole Arctic. Factors causing this shift are many and may be a combination of more than one. Some factors worth mentioning are contamination, climate change, migration patterns, loss of traditional hunting skills, affordability, and accessibility. Regardless of the aspects, the shift away from traditional food towards store-bought food dramatically changes the food security situation of Indigenous Peoples.

1.6 Conclusion:

There are many challenges in the Arctic that affect the four pillars of food security in one form or another and in different magnitudes. Climate change is known as the biggest force behind a dynamic Arctic where the consequences are severe and still relatively unknown. Climate change impacts all areas of life in the region and poses new threats and challenges to the food security of Indigenous Peoples. Human activities have largely contributed to the same process and have drastic outcomes on the environment and peoples. Lastly, it is determined that combined with these threats the contamination levels grow, which in turn has led to a reduction of traditional food. After addressing all of these issues, it is undeniable that there is a shift away from traditional foods

[104] Kuhnlein, Harriet V., et al., "Arctic indigenous peoples experience the nutrition transition with changing dietary patterns and obesity." *The Journal of Nutrition 134.6*, 2004:1447-1453.
[105] Sheehy, Tony, et al., "Traditional food patterns...", op. cit., p. 1.
[106] Ibidem, p.8.
[107] Kuhnlein, Harriet V., et al. "Arctic indigenous peoples experience...", op. cit., p. 1451.

towards a more western or store-bought and less nutritional diet among Indigenous Peoples in the Arctic.

Chapter 2: The Tools to Promote Food Security

After the Hot Springs Conference, when food security began to formulate international discussions, a number of tools and instruments have since been developed to better safeguard the four pillars of food security; access, availability, utilization and food systems stability. Mechanisms have been established for different circumstances internationally, regionally, nationally and locally; resulting in both direct and indirect outcomes towards the safeguarding of food in the Arctic. Mechanisms, or tools, may come in many forms, some of which are hard-law or legally binding legal instruments, but also in the form of soft law and recommendations. Their purpose is to further mitigate environmental problems, promote food security, and to help improve the quality or safeguard the contamination of food. In the Arctic region and for Indigenous Peoples such mechanisms are necessary to protect against the threats to food security. However, to ensure effectiveness, proper monitoring and implementation must be carried out accordingly. Some instruments worth mentioning are the Food and Agriculture Organization of the United Nations (FAO), World Health Organization (WHO), and World Wide Fund for Nature (WWF). However, for the purposes of this paper, the emphasis will be placed on international and regional level instruments that work to promote food security specifically in the Arctic region. Furthermore, I have grouped some instruments into respective categories: marine, shipping, atmosphere and land. However, it is obvious that these mechanisms substantially overlap with one another and should not be confined to the category in which they have been placed

2.1 Legal Instruments

The main legal instruments used in international policy are primarily of hard law or soft law forms. Legally binding law is one method that can be devised into two parts: customary law and treaty law. Customary law is defined by Timo Koivurova and Leena Heinämäki as the "norms created when states develop a certain custom that gradually becomes seen as legally required."[108] On the other hand, they describe international treaties as obligatory, but only on those states who are a party to them.[109] Soft law is another instrument, although without any legality, it is still important in the formation of legally binding law. Koivurova and Heinämäki recognize soft law as those normative instruments adopted by states without the intention of creating internationally

[108] Koivurova, Timo and Leena Heinämäki, "The participation of indigenous peoples in international norm-making in the Arctic." *Polar Record* 42 (221): 101–109, 2006, p. 102.
[109] Ibidem.

legally binding norms.[110] To counteract threats to food security, great importance is placed on legal instruments in both the international and national levels. These instruments have developed in a linear fashion to better regulate and increase protection over food security in the Arctic. Legally binding instruments are deemed effective mainly when implemented into national courts. If a state has obtained a monist approach, it allows binding international law to become automatically mandatory for the nation state, becoming easier for a state to accept those rules of international law. In addition, customary norms become binding on the state whether they sign and ratify the document or not. Whereas a dualist approach, the most common of nation states, allows the state to decide in its own national legislation if it willing accept the binding international law or not.

2.1.1 United Nations Convention on the Law of the Sea

United Nation Convention on the Law of the Sea (UNCLOS) is thought to be one of the most relevant and comprehensive hard law documents governing the Arctic today. UNCLOS is an overarching convention and is a well-respected document within the international community. It is considered to be the most referred to legally binding framework for the Arctic region, given that the Arctic Ocean's international status as an ocean.[111] UNCLOS did not come into force until 1994 and the United States is the only Arctic country that still has to ratify, however despite ratification, they still abide by its provisions as a per customary international law.[112]

This document is of upmost importance for the regulation of state activity in the region and for Indigenous Peoples who depend on the waters for survival. Water usage is far reaching and extends beyond the conventional purposes for Arctic Indigenous Peoples and used in all aspects of their lives. Waterways are commonly methods of transportation, especially during summer months when ice has disappeared and a bulk of their food is derived from the marine ecosystem. Nuttall, et al. observes that, "today, many Indigenous communities across the Arctic continue to depend on the harvesting and use of living terrestrial, marine, and freshwater resources."[113] Also revealing that, "the species most commonly harvested by the Indigenous Peoples of the Arctic are marine mammals such as seals; walrus, narwhal, beluga, fin, and mink

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[110] Ibidem, p. 103.
[111] Malloy, supra note 69 at 481-482; and UNCLOS, infra note 100 *In: Fallon, Stacy, "Don't leave the Sami out in the Cold: The Arctic Region Needs a Binding Treaty that Recognizes its Indigenous Peoples' Rights to Self-Determination and Free, Prior and Informed Consent." Law of the Sea Reports, Vol. 3: No. 1. 2012, p. 9.*
[112] Nowlan, Linda, "Arctic legal regime for environmental protection." No. 44. IUCN, 2001, p. 19.
[113] Nuttall, Mark, et al., "Hunting, herding, fishing and gathering: indigenous peoples and renewable resource use in the Arctic." *Arctic Climate Impact Assessment,* 2005: 649-690, p. 652.

whale."[114] It is undeniable that Indigenous Peoples in the north rely heavily on the marine environment; therefore, UNCLOS holds high favour in the Arctic.

Art. 234 of UNCLOS is the most prevalent because it grants coastal states the right to adopt and enforce non-discriminatory laws for the prevention and control of marine pollution from vessels in ice-covered areas where, among other possible impacts, pollution of the marine environment could cause major harm to or irreversible disturbance of the ecological balance.[115] This article remains most prominent because of its reference to ice-covered areas. UNCLOS is not an environmental treaty by any means, but it does make significant references to the environment through Articles 192 – 196 and Part XII, which can be favourable in the Arctic.

In Articles 192-196, obligations are fixed on states to protect and preserve the marine environment; the right to exploit their natural resources; to take measures to prevent, reduce and control pollution of the marine environment; the duty not to transfer damage of hazards to transform one type of pollution into another; and they must prevent the use of technologies or introduction of alien or new species.[116] Article 207 also clearly articulates that states "have a duty to prevent, reduce and control pollution of the marine environment from land-based sources. To implement preventative measures, it requires that nations adopt laws and regulations to prevent this."[117] Lastly, Part XII of UNCLOS addresses the protection and preservation of the marine environment. By which, Linda Nowlan explains, "all signatory states are to take measures necessary to ensure that activities under their jurisdictions will control and are conducted so as not to cause damage by pollution to other states and their environment."[118]

Despite high relevance and significance of the document, there are still gaps that remain. One example is that UNCLOS fails to address the Indigenous Peoples who rely on the Arctic seas and oceans as a source of food. The document does not refer to Indigenous Peoples, nor does it make connections between their livelihoods and the sea as their primary source of food. Another question surrounds the applicability of Art. 234 when the Arctic becomes ice-free. These

[114] Ibidem.
[115] Art. 234 of the United Nations General Assembly, "Convention on the Law of the Sea." December, 10, 1982.
[116] Ibidem, Art. 192-196.
[117] Ibidem, Art. 207.
[118] Nowlan, Linda, "Arctic legal regime...", op. cit.,, p. 19.

are only a few reasons why UNCLOS is inadequately equipped to handle the disputes that are likely to arise with the changing environment.[119]

2.1.2 Convention on Biological Diversity

The Convention on Biological Diversity (CBD) is an alternative overarching treaty aimed at the preservation and conservation of global biodiversity. This is the first treaty of its kind concerning the protection and conservation of ecosystems on a global scale.[120] Biodiversity in the Arctic is important, where it is often compared to the Amazon as one of the most ecologically diverse places on earth.[121] The Convention highlights two key themes: the sustainable use of biological resources and the equitable sharing of benefits derived from the use of biological resources.[122] Indigenous Peoples are well known for their sustainable use of biological resources, food being an excellent example. Ultimately, by protecting these biological resources, Indigenous and cultural traditions are secured.

It is believed that the harvesting of wild species is the single most common feature of natural resource use that cuts across all the regions and peoples of the Arctic.[123] For Indigenous Peoples, biological diversity is a precious resource in the Arctic that must be preserved and protected. Art. 8 of the CBD requires parties to:

> "prevent the introduction, control or eradication of alien species which can negatively impact biodiversity (8h); subject to its national legislation, respect, preserve and maintain knowledge, innovations and practices of Indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of the benefits arising from the utilization of such knowledge, innovations and practices (8J); develop or maintain necessary legislation

[119] Fallon, Stacy, "Don't leave the Sami out in the Cold: The Arctic Region Needs a Binding Treaty that Recognizes its Indigenous Peoples' Rights to Self-Determination and Free, Prior and Informed Consent." *Law of the Sea Reports*, Vol. 3: No. 1. 2012, p. 13.
[120] Nowlan, Linda, "Arctic legal regime...", op. cit.,p. 26.
[121] Picq, Manuela, "Listening to the Arctic." Aljazeera, September, 27, 2012, http://www.aljazeera.com/indepth/opinion/2012/09/201292610542492151 9.html. Accessed April, 2, 2016.
[122] Art. 1 of the United Nations General Assembly, "Convention on Biological Diversity." May, 22, 1992.
[123] World Wide Fund for Nature, "Guidelines for Consumptive Use of Arctic Species." *In: Nowlan, Linda. "Arctic legal regime...", op. cit., p. 28.*

and/or other regulatory provisions for the protection of threatened species and populations (8k)."[124]

This Convention demonstrates the role of Indigenous Peoples in protecting biodiversity. Whereby, it reminds states, "to recognize the close and traditional dependence of many Indigenous and local communities embodying traditional lifestyles on biological resources, and the desirability of sharing equitably benefits arising from the use of traditional knowledge, innovations and practices relevant to the conservation of biological diversity and the sustainable use of its components."[125] Generally, food is voiced with awareness, where conservation and sustainable use of biological diversity is of critical importance for meeting the food, health and other needs of the growing world population and with the upmost significance for Indigenous Peoples' survival.[126] Indigenous Peoples in the Arctic have practiced the sustainable use of biological diversity over many centuries, primarily for the consumption, traditional and cultural needs. It is argued by Nowlan that, "if done with the goal of creating conservation benefits, commercial consumptive use could be of value to Arctic communities, not only for economic benefits, but as a way to preserve traditional lifestyles and cultural values and safeguard the environment."[127]

2.1.3 Marine

As previously communicated, it is undeniable that Indigenous Peoples rely on the marine environment to uphold their livelihood. Moving beyond the 1982 UNCLOS document there has since been additional mechanisms created to protect the marine environment. Such documents include The International Regulation of Ship Source Pollution; The Oil Spill Prevention, Administration and Response Convention; and the Minamata Convention on Mercury.

Oil Spill Prevention, Administration and Response Convention

The Oil Spill Prevention, Administration and Response Convention (OSPAR) of 1992 covers the protection of marine resources in the North Atlantic Ocean area that expands a great distance into Arctic waters.[128] These Arctic waters are said to cover approximately 40% of the OSPAR maritime zone.[129] According to the OSPAR Commission, parties to the Convention, individually or jointly, take all possible steps to prevent and eliminate pollution: of the maritime

[124] Art. 8 of the United Nations General Assembly, "Convention on Biological Diversity." May, 22, 1992.
[125] Ibidem, preamble.
[126] Ibidem.
[127] Nowlan, Linda, "Arctic legal regime…", op. cit., p. 28.
[128] Refer to map: http://www.ospar.org/convention/the-north-east-atlantic. Accessed April, 23, 2016.
[129] OSPAR Commission, "Region I: Arctic Waters." http://www.ospar.org/convention/the-north-east-atlantic/i. Accessed April, 19, 2016.

area from land-based sources; by dumping or incineration of wastes or other matter; and from offshore sources (i.e. offshore installations and pipelines that reach the maritime area).[130] The OSPAR Convention is pertinent and essential for maintaining Arctic biodiversity, where it covers six species of fish, one of the most abundant seabird regions in the world, and many species of whale and seal. The protection of such vast Arctic biodiversity, therefore, is essential for the securing of Indigenous food sources.

Minamata Convention on Mercury

As of July, 2013, the Minamata Convention on Mercury is the most recent legal instrument covering the marine environment. Mercury is a harmful substance that has overwhelmed people and food sources in the Arctic for years. According to Alex Kirby et al., "the once pristine Arctic region is a special case for mercury, where about 200 tonnes of mercury are deposited in the Arctic annually, generally far from where it originated."[131] The Indigenous Peoples living in the Arctic environment are not the only ones distressed from mercury persistents, but they are far more susceptible to these toxins because of their traditional food sources. According to the 2011 Arctic Monitoring and Assessment Programme (AMAP) report and summarized by the United Nations Environmental Programme (UNEP) revealing that, "mercury levels are continuing to rise in some Arctic species, despite reductions over the past 30 years in emissions from human activities in some parts of the world."[132] Furthermore, they documented a ten-fold increase, in the last 150 years, of the mercury level in belugas, ringed seals, polar bears and birds of prey.[133] Over 90 percent of the mercury in these animals, and possibly some Arctic human populations, are believed to have originated from human sources.[134] The animals listed above are popular food sources for some Indigenous Peoples living in the Arctic. Also significant, the preamble of the Minamata Convention contains, "*noting* the particular vulnerabilities of Arctic ecosystems and Indigenous communities because of the bio magnification of mercury and contamination of traditional foods, and concerned about Indigenous communities more generally with respect to the effects of mercury."[135] Yet despite knowing all of this, the United States remains the only Arctic state to sign and ratify the convention.

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[130] OSPAR Commission, "OSPAR Convention." October, 7, 1997, Council Decision 98/249/EC. OJ L 104 of 3.4.1998, source: EUR-Lex.
[131] Kirby, Alex, et al., "Mercury–Time to act." *United Nations Environment Programme,* 23, 2013, p. 22
[132] Arctic Monitoring and Assessment Programme, "Assessment 2011: Mercury in the Arctic." Executive Summary and Key Recommendations. Arctic Monitoring and Assessment Programme (AMAP), Oslo, Norway 193, 2011, p. xi.
[133] Ibidem, p. xii.
[134] Ibidem.
[135] United Nation Environment Programme, "Minamata Convention on Mercury." October, 10-11, 2013. p. 2.

2.1.4 Shipping

Shipping will grow in the Arctic and progress as sea ice continues to retreat. The attraction of the endeavour is promoted by the belief that it will reduce shipping costs through the amount of time traveled and fuel savings. Consequently, leaving a cost to the Arctic marine environment, where an increase in shipping could pose a potential threat to the ecosystem and species populations.[136] The WWF claims that, "shipping brings impacts like noise, collisions, and potential risks from oil spills; these impacts are experienced most directly by the whales that share these Arctic waters – including narwhals, beluga and bowhead whales."[137] They also use narwhals as an example, where they depend on sound to communicate, find food, avoid predators, and take care of their young.[138] Therefore, noise pollution from shipping could have long-lasting impacts on these animals. Additionally, fishing vessels and passenger ships could take a toll through air and water discharges, as well as the release of pollutants from anti-fouling systems.[139] There is a risk of toxic chemicals and oils that could be accidentally released into the environment, and considered one of the most serious threats of shipping.[140] Furthermore, Martin Robards remarks that, without policies that proactively address the risks associated with large vessels transiting in marine mammal hotspot areas, or areas that support Indigenous subsistence practices, negative impacts on these populations and Indigenous food insecurity can be expected.[141] Overall, it is obvious that an increase in shipping could have extensive effects on the environment, animals, and people living in the Arctic region; hence, the need for mechanisms to safeguard food sources against shipping impacts.

International Regulation of Ship Source Pollution

In 1972, the Convention on the Prevention of Marine Pollution by Dumping of Waste and other Matter, better known as the London Convention, was acknowledged. Article I of the London Convention presents, "the pledge to take all practicable steps to prevent the pollution of the sea by the dumping of waste and other matter that is liable to create hazards to human health, to harm living resources and marine life, to damage amenities or to interfere with other legitimate uses

[136] Magnus Eger, Karl, "Arctic Ecosystems and the Impact of Shipping Activities." http://www.arctis-search.com/Arctic+Ecosystems+and+the+Impact+by+Shipping+Activities. Accessed April, 21, 2016.
[137] World Wide Fund for Nature, "Balancing shipping opportunities with a healthy Arctic future." http://www.wwf.ca/conservation/arctic/a_new_frontier_for_shipping/. Accessed April, 21, 2016.
[138] Ibidem.
[139] Magnus Eger, Karl, "Arctic Ecosystems and the Impact of Shipping Activities." http://www.arctis-search.com/Arctic+Ecosystems+and+the+Impact+by+Shipping+Activities. Accessed April, 21, 2016.
[140] The Arctic Council, "Arctic Marine Shipping Assessment 2009 Report." April, 2009, p. 136.
[141] Robards, Martin, "Resilience of international policies...", op. cit., p. 100.

of the sea."[142] This document is of particular use to the Arctic environment, since the region has been used as a dumping ground for hazardous wastes.[143] Such actions were commonplace for the Soviet Union during the Cold War. The International Atomic Energy Agency produced a report that focused on radioactive dumping in the Arctic seas, where they made it clear that gradual deterioration of the waste packages and containments could lead to impacts in the future.[144] Furthermore, they note that, "these actions could result in contamination of the marine food chain, with the possibility of additional radiation exposure to humans through the consumption of fish and other marine foodstuffs as a consequence."[145] These findings remain unclear, as the effects are still widely unknown, but studies are progressing to shine light on the impacts.

International Convention for the Prevention of Pollution from Ships

Similar to the London Convention is the International Convention for the Prevention of Pollution from Ships (MARPOL) that entered into force as of 1973, supplemented by the 1978 Protocol, and binding since 1983.[146] MARPOL is the most sought after international convention that oversees the prevention from pollution to the marine environment by ships during operational or accidental causes.[147] The Convention is a likely benefit for marine mammals and the marine environment, and advantageous to Indigenous that consume this food. MARPOL has since become the basis for the 2009 Polar Code.

Polar Code

The Polar Code is the newest Arctic agreement in shipping that hailed from the combination of MARPOL and SOLAS (Safety of Life at Sea), and initiated through the International Maritime Organization (IMO). The objective "is to provide for safe ship operation and the protection of the polar environment by addressing risks present in polar waters and not adequately mitigated by other instruments of the Organization."[148] This agreement safeguards the

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[142] Art. I of the International Maritime Organization, "Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter." August, 30, 1975.
[143] Rothwell, Donald R., "Global Environmental Protection Instruments" *In: Vidas, Davor, Ed. Protecting the Polar Marine Environment: Law and Policy for Pollution Prevention, Cambridge University Press, 2000, p. 64.*
[144] International Atomic Energy Agency, "Modelling of the radiological impact of radioactive waste dumping in the Arctic Seas." *Report of the Medelling and Assessment Working Group of the International Arctic Seas Assessment Project (IASAP),* January, 2003, p. 3.
[145] Ibidem.
[146] International Maritime Organization, "International Convention for the Prevention of Pollution from Ships." February, 17, 1973. http://www.imo.org/en/About/Conventions/ListOfConventions/Pages/International-Convention-for-the-Prevention-of-Pollution-from-Ships-(MARPOL).aspx. Accessed April, 23, 2016.
[147] Ibidem.
[148] Introduction, par. 1 of the International Maritime Organization, "International Code for Ships Operating in Polar Waters (Polar Code)." Resolution MSC.385(94), Adopted: November, 21, 2014.

Arctic environment in a number of ways, by putting protective measures on oil, invasive species, sewage, garbage and chemicals. These instruments are important to ensure sustainable shipping and to prevent detrimental impacts on food and animals in the Arctic. Furthermore, because of its polar focus, it could potentially initiate further agreements aimed to mitigate threats from human activities in the Arctic. The Polar Code is expected to go into force January, 1, 2017.

As shipping progresses in the Arctic, the use of these instruments become fundamental for those Indigenous Peoples depending on the marine environment as a food source and susceptible to the consequences of increased shipping in the area.

2.1.5 Atmosphere

Contaminants in the atmosphere are well documented over the last few decades, whereby they travel long distances and reside in the fat of the animals, particularly marine animals in the Arctic. Stow, et al. admits that, "once in the Arctic, pollutants accumulate in food webs where some bio magnify to levels at which adverse effects have been found in wildlife and humans, for humans it is primarily due to their traditional consumption of this wildlife."[149] New contaminants are frequently introduced; therefore, mechanisms need to be proactive to address such threats.

Convention on Long-Range Trans-Boundary Air Pollution

In 1979, the protection of pollution crossing national boundaries was needed, and consequently the Convention on Long-Range Trans-Boundary Air Pollution (LRTAP) was introduced, and became the first internationally legally binding agreement outlining the principles for regional cooperation on trans-boundary air pollution.[150] LRTAP is ratified by all eight Arctic states, except the United States, who has merely accepted the Convention.[151] The document has since evolved into three additional protocols, all making specific reference to the Arctic:

Firstly, the 1994 Oslo Protocol entered into force in 1998, targeting the reduction of sulphur emissions. The Arctic is voiced where it describes, "mindful that measures to control emissions of sulphur and other air pollutants would also contribute to the protection of the sensitive Arctic environment."[152] Secondly, the 1998 Aarhus Protocol on Heavy Metals, which entered into

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[149] Stow, Jason, et al., "transboundary pollution in a changing Arctic." *Prepared for the Arctic Observing Summit, Vancouver,* April 30 - May 2, 2013, p. 1.
[150] United Nations Economic Commission for Europe, "The 1979 Geneva Convention on Long-range Transboundary Air Pollution." http://www.unece.org/env/lrtap/lrtap_h1.html. Accessed April, 23, 2016.
[151] Nowlan, Linda, "Arctic legal regime...", op. cit., p. 23.
[152] Preamble of the Protocol to the 1979 Convention on Long-Range Transboundary Air Pollution on Further Reduction of Sulphur Emissions, Oslo, 1994, UNTS, vol. 2030, Doc. EB.AIR/R.84;E/ECE/ENHS/001 /2002/I, p. 122.

force in 2003; targeted three harmful metals: cadmium, lead and mercury emissions.[153] Parties to the Protocol are obliged to reduce emissions from industrial sources, combustion processes and waste incineration; while using the best available techniques (BAT) for stationary sources such as special filters, scrubbers or mercury-free processes. In the preamble it discusses, "measures to control emissions of heavy metals would also contribute to the protection of the environment and human health in areas outside the United Nations Economic Commission for Europe (UNECE) region, including the Arctic and international waters."[154] Lastly, complimentary to the Protocol on heavy metals, the 1998 Aarhus Protocol on Persistent Organic Pollutants (POPs) also entered into force in 2003. Objectives of this Protocol involves the control, reduction or elimination of discharges, emissions and losses of POPs, a total of 16 substances.[155] This preamble includes three references to the Arctic:[156]

- POPs emissions are transported across international boundaries and are deposited in Europe, North America and the Arctic, far from their site of origin, and that the atmosphere is the dominant medium of transport;
- Acknowledging that the Arctic ecosystems and especially its Indigenous People, who subsist on Arctic fish and mammals, are particularly at risk because of the bio magnification of POPs;
- Mindful that measures to control emissions of POPs would also contribute to the protection of the environment and human health in areas outside the UNECE region, including the Arctic and international waters.

The recognition of Arctic Indigenous Peoples in the protocol is a significant step in observing the relationship between their populations and the contaminants affecting them. Both Protocols, the Heavy Metals Protocol and the POPs Protocol tend to focus on the general elimination of contaminants globally, however, in both cases the Arctic is the likely beneficiary of such elimination. Approximately half the substances targeted in the POPs Protocol are not subject to

[153] United Nations Economic Commission for Europe, "The 1998 Aarhus Protocol on Heavy Metals." http://www.unece.org/env/lrtap/hm_h1.html. Accessed April, 23, 2016.
[154] Preamble of the United Nations Economic Commission for Europe, "Protocol to the 1979 Convention on Long-Range Transboundary Air Pollution on Heavy Metals." June, 24, 1998.
[155] United Nations Economic Commission for Europe, "The 1998 Aarhus Protocol on Persistent…", op. cit.
[156] Preamble of the Protocol to the 1979 Convention on Long-Range Transboundary Air Pollution on Persistent Organic Pollutants, Aarhus, June, 24, 1998.

immediate elimination, nor have all Arctic States ratified the protocols, therefore, the process is slow but it has opened up the doors for further legally binding documents concerning pollution.[157]

Persistent Organic Pollutants Treaty

Complimentary to the efforts of the LRTAP, the Persistent Organic Pollutants (POPs) Treaty of 2001 aided further protection of Indigenous Peoples and the Arctic environment. This treaty had input from Indigenous Peoples from across the region through the guidance of the Inuit Circumpolar Council (ICC), a non-governmental organization advocating on behalf of the Inuit peoples across the region. Indigenous participation was seen through a number of meetings and the media whereby they made suggestions for the POPs treaty.[158] Nowlan believes that the Treaty was initiated by studies demonstrating, "how contaminants were present in the tissue, blood, and even breast milk of Arctic residents living far from any sources of those pollutants."[159] The President of the Inuit Circumpolar Conference assisted in the creation of the POPs Treaty by presenting to delegates on the gloom of discovering contaminated traditional food, which involved Inuit mothers being wary about breast-feeding their infants.[160]

In the preamble of the POPs Treaty, it acknowledges the vulnerability of Arctic ecosystems, and especially Indigenous communities, who are at particular risk because of the bio magnification of POPs and contamination of traditional foods.[161] The Inuit Circumpolar Council is proactive in doing research to address additional toxins and advocating for them to be added to the list of 12 already prohibited substances.

United Nations Framework Convention on Climate Change & Kyoto Protocol

The United Nations Framework Convention on Climate Change (UNFCCC) entered into force in the 1994 with additional objectives for the atmosphere. The UNFCCC is primarily focused on the "stabilization of greenhouse gas (GHGs) concentrates in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system."[162] Climate change is one of the largest threats to Indigenous livelihoods and this Convention is a notable

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[157] VanderZwaag, David, "International Commons" 9 YB iel Law at 272, 1998, *In: Nowlan, Linda, "Arctic legal regime for environmental protection." No. 44. IUCN, 2001, p. 24.*
[158] Fenge, Terry, "Indigenous Peoples and Global POPs." *Northern Perspectives*, Vol: 6. No. 1, 2000. *In: Nowlan, Linda, "Arctic legal regime for environmental protection." No. 44. IUCN, 2001, p. 25.*
[159] Nowlan, Linda, "Arctic legal regime...", op. cit., p. 24.
[160] Ibidem.
[161] Preamble of the United Nations Environmental Programme, "The Stockholm Convention on Persistent Organic Pollutants," 2256 UNTS 119; 40 ILM 532, May, 22, 2001.
[162] Art. 2 of the United Nations Secretary General, "United Nations Framework Convention on Climate Change." 1771 UNTS 107/1994, ATS 2/31 ILM 849, 1992.

counteraction. The Arctic is not specified in the Convention, but the impacts to the region are dominant at meetings revolving around climate change.[163] Also outlined in the UNFCCC objective is to, "ensure that food production is not threatened, allowing economic development to proceed in a sustainable manner."[164] Food is a global issue, but the consequences of GHG emissions are allowing it to become a reason for concern in the Arctic. Furthermore, the UNFCCC was born to alleviate the threats of climate change, at a time before there was a concrete understanding of the effects on population and food security. Therefore, the Kyoto Protocol was created in 1997 as additional support to the UNFCCC by committing its parties to internationally binding emission reductions in order to reduce the repercussions of greenhouse gases (GHGs) and climate change.[165] The UNFCCC remains widely recognized and influential due to its high ratification rate among member states and all eight circumpolar states are party to the Convention, which is a notable accomplishment.[166]

The FAO notes that, "the Conference of Parties (COP), under the UNFCCC, meets annually to review global climate policy and oversee implementation of agreed mitigation and adaption measures."[167] These measures are legally binding on those states who sign and ratify the Convention. Most recently, the Paris Agreement (COP 21) in December 2015 has made efforts to build on the 1992 UNFCCC, with a similar focus for mitigation and adaptation of climate change. Adaptation for state parties is best explained in Art. 7(5) of the Paris Agreement, where:

> "Parties acknowledge that adaptation action should follow a country-driven, gender-responsive, participatory and fully transparent approach, taking into consideration vulnerable groups, communities and ecosystems, and should be based on and guided by the best available science and, as appropriate, traditional knowledge, knowledge of Indigenous Peoples and local knowledge systems, with a view to integrating adaptation into relevant socioeconomic and environmental policies and actions, where appropriate."[168]

This paragraph is a good example of current developments to include Indigenous Peoples in the climate change process. As mentioned above, the role of their traditional knowledge and local

[163] Nowlan, Linda, "Arctic legal regime...", op. cit., p. 26.
[164] Art. 2 of the United Nations Secretary General, "United Nations Framework Convention on Climate Change." 1771 UNTS 107/1994, ATS 2 /31 ILM 849, 1992.
[165] United Nations Framework Convention on Climate Change, "Kyoto Protocol." http://unfccc.int/kyoto_protocol/items/2830.php. Accessed April, 24, 2016.
[166] Nowlan, Linda, "Arctic legal regime...", op. cit., p. 26.
[167] Food and Agriculture Orgnization of the United Nations, "Climate change and food security...", op. cit., p. 71.
[168] Art. 7(5) of the United Nations Framework Convention on Climate Change, "Adoption of the Paris Agreement." December, 12, 2015, FCCC/CP/2015/L.9/Rev. 1.

knowledge systems should contribute to policies where appropriate is important for effective actions. In addition, the FAO has implied, "not only is food security an explicit concern under climate change; successful adaptation and mitigation responses in agriculture can only be achieved within the ecologic, economic and social sustainability goals set forth by…the UNFCCC."[169] The UNFCCC remains a global leader in the mitigation and adaptation of climate change, environmental problems and further promotion of sustainable development.

2.1.6 Land

Biodiversity and ecosystems in the Arctic are extremely fragile and volatile to the changes taking place around it. However, natural adjustments to the environment are not the only instigator, there are countless external factors taking place, some of which are human induced. It is well assured that Indigenous Peoples are inseparable with the Arctic environment, as the land and sea provides them with their daily needs. A number of documents that provide further protection of the land and biodiversity in the Arctic in different ways, for example the Agreement on the Conservation of Polar Bears and the Basel Convention.

Agreement on the Conservation of Polar Bears

The countries of Canada, Denmark, Norway, the Union of Soviet Socialist Republics (now Russia) and the United States have established the Agreement on the Conservation of Polar Bears in 1973, which prohibited the taking (hunting, killing and capturing) of polar bears.[170] One exception to this Agreement, as outlined in Article III (1)(d), "no such taking must be carried out except by local people using traditional methods in the exercise of their traditional rights and in accordance with the laws of that Party."[171] Indigenous Peoples have harvested this animal for hundreds of years, through which it has become culturally important; primarily for food, but also for economic exchange. This Agreement is still beneficial for the Indigenous Peoples as taking polar bears remain their exclusive right. However, the main point of the Treaty is to sustain the ecosystems in the Arctic.

Basel Convention

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[169] Tubiello, Francesco, "Climate change adaptation and mitigation: challenges and opportunities in the food sector." *Prepared for the High-level conference on world food security: the challenges of climate change and bioenergy*, Rome, 3-5 June 2008, 2012, p. 1.
[170] Art. 1 of the Agreement on the Conservation of Polar Bears, Oslo, November, 15, 1973, August, 30, 2013. http://pbsg.npolar.no/en/agreements/agreement1973.html. Accessed April, 22, 2016.
[171] Ibidem, Art III 1(d).

The 1989 the Basel Convention produced the Control of Trans-Boundary Movements of Hazardous Wastes and their Disposal, it entered into force in 1992 and the United States remains the only Arctic State that has not fully ratified the document. According to the Canadian Encyclopedia, "hazardous wastes are waste substances whose disposal in the environment could potentially pose hazards to human health, jeopardize natural or agricultural resources, or interfere with other amenities."[172] Leading up to the Convention, there were concerns over the trade of dangerous or hazardous waste as certain countries were accepting significant amounts of this waste for economic gain. Russia is one example where they were sending proposals for accepting imports of hazardous waste in order to make a profit.[173] Moreover, certain areas of Russia, specifically the Kola Peninsula and Siberia, were well known for generating significant amounts of hazardous industrial waste.[174] Concerns were expressed over waste being transported through Arctic waters and the potential effects on nearby food systems and populations, although the effects remain uncertain, it is crucial to have these measures in place regardless.

2.1.7 International Labour Organization No. 169

The International Labour Organization (ILO) has produced document No. 169 that is extremely important for Indigenous Peoples globally. This document is one of the most comprehensive legally binding treaties for Indigenous Peoples rights. Inside the document it mentions Indigenous cultures, traditions, prior consultation, and rights to ownership over land however, there is no mention of the right to food. Regardless, the promotion of cultures, traditions, and rights to ownership over land are all interconnected with the right to food and food security. Only 22 countries have signed and ratified ILO 169 thus far, with Norway and Denmark being the only Arctic States. However, in some instances it remains one of the most referred to legal instruments on the rights of Indigenous Peoples.

2.1.8 Judicial Decisions: Inter-American Court of Human Rights

It is significant to include judicial decisions as a relevant legal instrument. Two recent events have sparked international dialogue on human rights and climate change. Firstly, in December 2005, the Chair of the Inuit Circumpolar Conference (ICC) submitted a petition to the

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[172] Bewers, J.M., "Hazardous Wastes." *The Canadian Encyclopedia,* December, 16, 2013, http://www.thecanadianencyclopedia.ca/en/article/hazardous-wastes/. Accessed April, 22, 2016.
[173] Whittell, Giles, "Russia to accept nuclear waste – for $30 billion," Vancouver Sun, Dec. 22, 2000, A9c. *In: Nowlan, Linda, "Arctic legal regime for environmental protection." No. 44. IUCN, 2001, p. 35.*
[174] Rothwell, Donald R., "The Polar Regions and the Development of International Law, Cambridge: Cambridge University Press, 1996, 214, *In: Nowlan, Linda, "Arctic legal regime for environmental protection." No. 44. IUCN, 2001, p. 36.*

Inter-American Commission on Human Rights (IACHR) requesting relief for human rights violations resulting from the impacts of global warming and climate change. UNEP summarizes that, "the petition specifically alleged that the United States—the largest cumulative emitter of greenhouse gas (GHG) emissions to date—had violated the Inuit's human rights by failing to adopt adequate GHG controls.[175] Secondly, the Arctic Athabaskan Council (AAC) has also filed a petition against Canada to the ICAHR, under similar circumstances, for the violations of their human rights stemming from the rapid arctic warming and black carbon emissions by Canada.[176]

Although the Commission rejected the ICC petition and the AAC decision is still pending, both of these show a shift in international law and drawing increased attention towards the issues that Indigenous Peoples are facing. Also worth acknowledging is how both organizations use food to describe some of the features of their livelihoods being impacted. The AAC petition has highlighted the use of food and the dependence on this food for subsistence, hunting, cultures and other needs. Furthermore, climate change has led to decline of these traditional subsistence foods and significantly effecting the health of these peoples.[177] The ICC petition instead had indicated the reduced safety of storing and preserving food due to increased temperatures and melting permafrost.[178] Further adding that the unpredictability of weather presents serious challenges to human health, food security and possible survival of many cultures.[179] On the upside, Veronica de la Rosa Jaimes shows that, "although the Inuit Petition was dismissed it advanced the development of environmental justice claims of Indigenous groups by opening up an international dialogue about the link between climate change and human rights, as well as its effects on Indigenous communities.[180] The link between climate change and human rights involves many aspects of food security; therefore, such judicial decision can be further used as a source for promoting food security.

From the above discussions, the importance of legal instruments is noticeable in protecting and promoting the Arctic environment and people. A number of tools promote

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[175] Watt-Cloutier, Sheila, "Petition to the Inter-American Commission on Human Rights Seeking Relief from Violations Resulting from Global Warming Caused by Acts and Omissions of the United States." Dec, 7, 2005. *In: United Nations Environmental Programme. "Climate Change and Human Rights." December, 2015, p. 12.*

[176] Earth Justice, "Petition to the Inter-American Commission on Human Rights Seeking Relief from Violations of the Rights of Arctic Athabaskan Peoples Resulting from Rapid Arctic Warming and Melting Caused by Emissions of Black Carbon by Canada." April, 23, 2013, p. 49.

[177] Downing, Ashleigh, and Alain Cuerrier, "A synthesis of the impacts of climate change on the First Nations and Inuit of Canada." *Indian Journal of Traditional Knowledge* 10.1, 2011:57-70, p. 58.

[178] Watt-Cloutier, Sheila, "Petition to the Inter-American Commission ... ", op. cit., p. 4.

[179] Ibidem.

[180] Jaimes, Veronica de la Rosa, "The Arctic Athabaskan Petition: Where Accelerated Arctic Warming Meets Human Rights." *California Western International Law Journal*, Vol:45 No.2, 2015:213, p. 24.

sustainable development and food security, where some even go as far to protect aspects of Indigenous food security. Some features are indirectly protected by measures concerning biodiversity, pollution, and hazardous waste disposal. It is crucial that instruments are current and must address the present circumstances in the Arctic in order to tackle further gaps in food insecurity.

2.2 Mitigation and Adaptation to Environmental Problems and the Promotion of Sustainable Development: Highlighting the Arctic Council

Over the years, there have been a number of actions and mechanisms created to further mitigate environmental problems and promote sustainable development within the Arctic. These projects and programs have been spearheaded by organizations that have long-term commitments in these areas. According to the Arctic Environmental Protection Strategy (AEPS), "mitigation is the action taken to avoid or lessen the adverse effects of an activity, furthermore, it may address ecological, economic or socio-cultural effects"[181] This definition by default, resembles the three pillars of sustainable development, which includes economic, environmental and social/cultural aspects. The mitigation of environment problems is usually associated with actions against climate change. While climate change is not the only environmental problem Indigenous Peoples face, it is so far the largest and leads to an influx of additional threats, such as: human activities, pollution, and environmental degradation.

To offset these threats, numerous actors have introduced activities, actions, mechanisms, and strategies. According to Kirsty Galloway-Mclean, "mitigation activities require appropriate institutional structures, the involvement of Indigenous farmers, forest-dependent people and fishing communities, coordinating these activities can be a tremendous challenge."[182] It is imperative to have everyone involved to mitigate the current environmental problems, but the more actors there are, the greater the challenge becomes. Galloway-Mclean points out, in terms of institutional structures, "governments are committed to minimising adverse social, economic and environmental impacts resulting from the implementation of measures taken to mitigate or adapt to climate change impacts."[183] Implementation measures must have a minimal impact to be careful with the infringement of other human rights.

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[181] Arctic Environmental Protection Strategy, "Guidelines for Environmental Impact Assessment (EIA) in the Arctic." *Sustainable Development and Utilization, Finnish Ministry of the Environment, Finland*, 1997, p. 24.
[182] Galloway- McLean, Kirsty, "Advance Guard: Climate Change Impacts, Adaptation, Mitigation and Indigenous peoples – A Compendium of Case Studies." *United Nations University – Traditional Knowledge Initiative, Darwin, Australia*, 2010, p. 19.
[183] Ibidem.

Closely related to mitigation, is adaptation, which introduces those actions devoted to assisting society in adjusting to the changing environment around them. The UNFCCC confirms that, "adaptation refers to adjustments in ecological, social, or economic systems in response to actual or expected climatic stimuli and their effects or impacts."[184] Moreover, "it refers to changes in processes, practices, and structures to moderate potential damages or to benefit from opportunities associated with climate change."[185] Adaptation can come in many forms but primarily used as a coping mechanism to the constant threat of climate change and environmental problems. The UNFCCC gives five general components of adaptation: observation, assessment of climate impacts and vulnerability, planning, implementation, as well as the monitoring and evaluation of adaptation actions.[186] The notion is that mitigation is the first step in the process and ideally, adaptation would come after. Implying that if mitigation is ineffective towards reducing environmental problems, then there is no other option but to adapt to the current changes.

Adaptation has been practiced by Indigenous Peoples in the Arctic for a significant length of time. Indigenous Peoples are thought to be most capable of adapting to the current climate change and environmental problems because of their close connection with the land. Galloway-McLean discusses a conversation with Chie Sakakibara, a researcher of vulnerable groups, who examines how Indigenous in Alaska are using contemporary storytelling as a way to help cope and maintain a connection with the disappearing land.[187] Galloway-McLean also acknowledges reindeer herding communities in Russia who are combining traditional knowledge and scientific knowledge in collaboration to predict weather events in order to direct their heard to alternative pastures.[188] Adaptation is only one method the Indigenous in the Arctic use for coping with the current situations.

2.2.1 Stockholm Conference

The 1972 United Nations Conference on the Human Environment is a notable starting point for discussion because it is seen as the overarching framework for mitigating environmental problems and the promotion of sustainable development. Increased international attention on the

[184] United Nations Framework Convention on Climate Change, "FOCUS: Adaptation." http://unfccc.int/focus/adaptation/items/6999.php. Accessed April, 4, 2016.
[185] Ibidem.
[186] Ibidem.
[187] Galloway-McLean, Kirsty, "Land Use, Climate Change Adaptation and Indigenous Peoples." *United Nations University*, October, 10, 2012. http://unu.edu/publications/articles/land-use-climate-change-adaptation-and-indigenous-peoples.html. Accessed April, 4, 2016.
[188] Ibidem.

environment led to the creation of some international environmental protection agencies, one of which is the United Nations Environmental Programme (UNEP). The purpose of the Conference was to establish proper structures for the overall right to a healthy environment. The first principle of the Stockholm declaration states that, "man has the fundamental right to freedom, equality and adequate conditions of life, in an environment of a quality that permits a life of dignity and well-being."[189] This outlines the necessity of the environment in order to achieve an adequate quality of life, also solidifying connections between human life and the environment. Although the United Nations Conference on the Human Environment failed to discuss food security, it did pave the way for increased protection that would expand well beyond that of the environment.

2.2.2 Rio Conference

The 1992 Rio Conference on environment and development is an overarching conference, stemming from the Stockholm Conference, which generated a number of international instruments to further promoting sustainable development and mitigating climate change, such as those previously mentioned, the CBD and the UNFCCC. Sustainable development is promoted through the CBD, where it reminds states that they are responsible for conserving biological diversity and to use their biological resources in a sustainable manner.[190] It also specifically recognizes Indigenous Peoples with special regard to these biological resources. On the other hand, the UNFCCC aims to neutralize climate change by encouraging all Parties to take action in two main ways:[191] "through mitigation, by taking action to prevent and limit further climate change by developing, gathering and sharing information on greenhouse gas emissions, national policies and best practices; and adaptation, whereby, taking action to protect and adapt to the impacts of climate change by launching national strategies including the provision of financial and technological support to developing countries and cooperating in preparing for adaptation to the impacts of climate change." The outcome of the Rio Conference served as a dual-purpose where it focuses on both the promotion of sustainable development and mitigation of climate change.

2.2.3 United Nations Environmental Programme

The United Nations Environmental Programme (UNEP) "is the leading global environmental authority that sets the global environmental agenda, promotes the coherent implementation of the environmental dimension of sustainable development within the United

[189] Principle 1 of the United Nations General Assembly, "United Nations Conference on the Human Environment." A/RES/2994, December, 15, 1972.
[190] Preamble of the United Nations General Assembly, "Convention on Biological Diversity." May, 22, 1992.
[191] World Meteorological Organization, "United Nations Framework Convention on Climate Change." https://www.wmo.int/pages/themes/climate/international_unfccc.php. Accessed April, 4, 2016.

Nations system and serves as an authoritative advocate for the global environment."[192] Its work encompasses, "assessing environmental conditions and trends; developing international and national instruments; and strengthening institutions for the wise management of the environment."[193] Nowlan adds, "UNEP has established a Regional Action Plan to Protect the Arctic Marine Environment with the eight Arctic States, such actions could act as a catalyst to prompt further action on marine environmental protection."[194] UNEP has done a lot of work in the Arctic to develop policy and further measures for mitigating climate change.

Intergovernmental Panel on Climate Change

UNEP, along with the World Meteorological Organization (WMO), generated the Intergovernmental Panel on Climate Change (IPCC). Their objective is to prepare, based on available scientific information, assessments on all aspects of climate change and its impacts, with a view of formulating realistic response strategies.[195] The IPCC had produced their first report in 1990, which was the starting point for the Rio Conference and the establishment of the United Nations Framework Convention on Climate Change (UNFCCC). The IPCC is one institution that contributes largely to the international community by proposing strategies that can be used to alleviate climate change and environmental problems. A primary example is the IPCC 2014 report, whereby they assess a number of key risks associated with climate change in the Polar Regions and possible adaptation measures to be utilized.[196] Recommendations by the IPCC are usually taken with great regard and applied as guiding principles for implementing policies and measures by governments, academic scholars and other stakeholders.

2.2.4 Arctic Council

Soft-law is frequently used in the Arctic and around the globe to introduce recommendations and other expectations of states without legal consequence. Jon Birger Skjærseth et al. describes soft-law as, "international norms that are deliberately non-binding in character but still have legal relevance."[197] Therefore, it is possible for soft-law to be effective in creating

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[192] United Nations Environmental Programme, "About UNEP." http://www.unep.org/About/. Accessed April, 4, 2016.
[193] Ibidem.
[194] Nowlan, Linda,. "Arctic legal regime...", op. cit., p. 22.
[195] Intergovernmental Panel on Climate Change, "History." https://www.ipcc.ch/organization/organization_history.shtml. Accessed April, 4, 2016.
[196] Field, Christopher B., et al., "Summary for policymakers." *Climate change 2014: impacts, adaptation, and vulnerability, Part A: global and sectoral aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change,* 2014:1-32, p. 25, see "Polar Regions" table.
[197] Skjærseth, Jon Birger, Olav Schram Stokke, and Jørgen Wettestad, "Soft law, hard law, and effective implementation of international environmental norms." *Global Environmental Politics* 6.3, 2006:104-120, p. 104.

mitigation measures against environmental problems and further promotion of sustainable development.

In the Arctic, soft-law can be best associated with the Arctic Environmental Protection Strategy (AEPS), which evolved from the coordination of all eight Arctic States through the 1991 Rovaniemi Declaration. The primary role of AEPS was to assess environmental impacts in the Arctic, suggestions to implement measures for pollution control, and further to reduce negative impacts on the environment. Its role was strictly confined to research and scientific operations but quickly led to the formation of the Arctic Council in 1996. According to their website, "the Arctic Council is the leading intergovernmental forum promoting cooperation, coordination and interaction among the Arctic States, Arctic Indigenous communities and other Arctic inhabitants on common Arctic issues, in particular on issues of sustainable development and environmental protection in the Arctic."[198] The significance of the Arctic Council comes from the specialized groups within the organization and their work using soft law recommendations to mitigate climate change and promote sustainable development.

Arctic Monitoring and Assessment Programme

The Arctic Monitoring and Assessment Program (AMAP) working group was established early as the assessment body under AEPS. Their mandate includes making suggestions towards actions of reducing threats to ecosystems and residents in the region, particularly surrounding environmental threats.[199] Their assessments use modern infrastructure and national research institutions combined with the use of traditional knowledge. Waliul Hasanat notes, "in order to implement the recommendations of AMAP at the national level, each state is required to define and develop its own implementation plan."[200] These implementation plans involve strategies and different programs to carry out the mitigation of environmental problems. This work has been used in recent food security projects, but this will be discussed more in depth later.

Emergency Prevention, Preparedness and Response

The Emergency Prevention, Preparedness and Response (EPPR) working group is also committed to alleviation actions. Their focus is on the development of mitigation and response

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[198] The Arctic Council, "The Arctic Council: A backgrounder." http://www.arctic-council.org/index.php/en/about-us. Accessed May, 4, 2016.
[199] Arctic Monitoring and Assessment Programme, "Welcome to AMAP." http://www.amap.no/. Accessed April, 4, 2016.
[200] Hasanat, Waliul, "Towards Model Arctic-Wide Environmental Cooperation Combating Climate Change." *Yearbook of International Environmental Law* 20.1, 2010:122-157, p. 132.

measures for the release of oil and gas in the Arctic.[201] Uniquely, the EPPR is not only focused on climate change but human induced activities such as oil and gas. Furthermore, they analyze the effectiveness of existing international agreements covering the Arctic, as well as accident reporting systems for these activities.[202] The EPPR significantly contributes to monitoring and combating human induced threats to the Arctic environment, where oil and gas are notably contributing and imposing on food insecurity in the Arctic.

Arctic Contaminants Action Program

The Arctic Contaminants Action Program (ACAP) focuses on pollution prevention and remediation. Their priorities lie with POPs, heavy metals, radioactivity and depletion of the ozone layer.[203] As discussed, these are all environmental problems that are protruding in the Arctic and ACAP aims to alleviate them by setting out programs and approaches in cooperation with other working groups, permanent participants and states. Under the Arctic Council, in coordination with a number of working groups, a report was published called the Arctic Climate Impact Assessment (ACIA) mainly analyzing changes in the Arctic from climate change. It was determined that these findings would be considered at national and international climate policy-making, with a focus on mitigation and adaptation to climate change in the Arctic.[204] It is obvious that ACAP is imperative for protecting food security in the Arctic, as the threats to food contamination are extremely detrimental.

Sustainable Development Working Group

The purpose of the Sustainable Development Working Group (SDWG) is to propose steps to advance sustainable development in the Arctic. The actions include pursuing opportunities to protect and enhance the environment, economies, culture and health of Indigenous Peoples in Arctic communities in response to the challenges, benefits and opportunities.[205] This working group remains valuable for Indigenous Peoples as they continue to focus on projects that address the

[201] Ibidem, p. 135.
[202] Emergency Prevention Preparedness and Response, "Report of the Third Ministerial Conference on the Protection of the Arctic Environment." Inuvik, Canada, March, 20-21, 1996, http://arctic-council.org/eppr/reports/ministerial-direction/1996-inuvik-canada/. Accessed April, 23, 2016.
[203] Hasanat, Waliul, "Towards Model Arctic-Wide Environmental..." op.cit., p, 137.
[204] Ibidem, p. 142.
[205] Sustainable Development Working Group, "SDWG Mandate." http://www.sdwg.org/about-us/mandate-and-work-plan/ Accessed April, 4, 2016.

human dimensions of the Arctic.[206] The SDWG is closely associated with food security projects in the Arctic and has recently taken a leading role under the Swedish Chairmanship of the Arctic Council by honing in on the human aspect.

Conservation of Arctic Flora and Fauna

The Conservation of Arctic Flora and Fauna (CAFF) is the biodiversity working group of the Arctic Council, addressing the conservation of Arctic biodiversity, communicating its findings to governments and residents of the Arctic.[207] It helps to promote practices ensuring sustainability of the Arctic's living resources, through various monitoring, assessment and expert group activities.[208] This portion of the Arctic Council is crucial working with ecosystems and governments, as an on the ground mechanism, pressuring states to follow through on their commitments towards biodiversity and the overarching CBD.

Protection of the Arctic Marine Environment

The purpose of the Protection of the Arctic Marine Environment (PAME) is to address policy and non-emergency pollution prevention and control measures related to the protection of the Arctic marine environment from both land and sea-based activities.[209] These include coordinated action programmes and guidelines complementing existing legal arrangements.[210] This is similar to other working groups who provide assessments that are brought forth to governments. Addressing both land and sea activities will allow for a more comprehensive outlook for promoting sustainable development. The marine environment is a large portion of the food consumption for some Indigenous Peoples and utilizing PAME to address the policies protecting such natural resources can be of great importance.

Task Forces

Task forces and expert groups are also a notable part of the Arctic Council in efforts to mitigate climate change and promote sustainable development. As recommended by the Senior Arctic Officials (SAOs), Ministers have recently begun the establishment of task forces and expert groups to target specific issues, such as short-lived climate forcers, search and rescue, etc. These

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[206] Sustainable Development Working Group, "Current Projects." http://www.sdwg.org/project/current-projects/. Accessed April, 4, 2016.
[207] Conservation of Arctic Flora and Fauna, "About CAFF." http://www.arctic-council.org/index.php/en/about-us/working-groups/caff. Accessed April, 4, 2016.
[208] Ibidem.
[209] The Arctic Council, "Protection of the Arctic Marine Environment." http://www.arctic-council.org/index.php/en/about-us/working-groups/pame. Accessed April, 4, 2016.
[210] Ibidem.

particular issues are examined over a certain length of time without having formulate a whole working group, saving on time and resources. Their work focused on short-lived climate forcers is a primary example of their dedication to allay climate change.

To date much the Arctic Council's work has been accomplished through their six working groups with additional support from task forces and expert groups. Working groups in particular focus on four main areas: the environment and climate, biodiversity, oceans, and Arctic peoples; making it easy to have crosscutting expertise across all groups. They provide recommendations, reports, assessments and other valuable tools for governments dealing with issues surrounding biodiversity, pollution, and sustainable development. Hasanat explains that they cover diverse areas of the state of affairs in the Arctic, including: the assessment, causes, possible ways of countering the changes occurring in the Arctic; each and every thing related to the Arctic, with the exception of military security.[211] He also goes on to say that, there are no clear boundaries between working groups, sometimes making it difficult to determine the most suitable working group for certain projects or operations, especially true in terms of food security.[212] The Arctic Council is well known for its technical assessments, where it reflects their commitment to environmental protection and sustainability as guiding principles, as well as the scope of the working groups.[213] Terry Fenge and Bernard Funston explain that, "the quality of this technical work is believed to reflect the significant intellectual, financial and personnel resources that are usually brought to bear in specific assessments."[214]

The Arctic Council has remained a devoted actor and the main soft-law body in the Arctic working towards the mitigation of climate change and the promotion of sustainable development in the region. Their assessments are created through the working groups, task forces, expert groups with the overall support and participation of Indigenous Peoples.

2.2.5 Indigenous Peoples as Actors

One of the most important developments in mitigating and adapting to environmental problems in the Arctic is through active participation of Indigenous Peoples living in the area. Their knowledge of the environment and their problem solving ability towards these threats are always one step ahead and have been for centuries. As Galloway-McLean announces, "reflecting their role as environmental stewards of the environment and drawing upon their traditional knowledge,

[211] Hasanat, Waliul, "Soft-law Cooperation in International Law: The Arctic Council's Efforts to Address Climate Change." *University of Lapland Press*, Rovaniemi, 2012, p. 193.
[212] Ibidem.
[213] Fenge, Terry and Bernard Funston, "The Practice ...", op.cit., p. 22.
[214] Ibidem.

Indigenous Peoples are at the vanguard of climate change."[215] In addition, a statement given by the International Indigenous Peoples Forum on Climate Change (IIPFCC) stated that, "we reiterate the need for recognition of our traditional knowledge, which we have sustainably used and practiced for generations; and the need to integrate such knowledge in global, national and sub-national efforts. This knowledge is our vital contribution to climate change adaptation and mitigation."[216] These efforts cannot move forward effectively without the knowledge and engagement of these peoples. In addition, Galloway-McLean mentions that, "they have been among the first communities to actively engage with the impacts of climate change – through recording their observations of changes in the climate and its effect on the natural environment, through implementing their own activities to adjust to ongoing and potential effects of climate change ('adaptation'), and through reaction to actions being taken by other countries to reduce greenhouse gas emissions ('mitigation')."[217] This was also emphasized at the most recent Paris Agreement, whereby it claims, "to strengthen knowledge, technologies, practices and efforts of local communities and Indigenous Peoples related to addressing and responding to climate change, and establishes a platform for the exchange of experiences and sharing of best practices on mitigation and adaptation in a holistic and integrated manner."[218] Indigenous Peoples participation is needed in order to assist policy-makers towards the creation of much more concrete mechanisms. In the Arctic, these efforts are already highlighted through permanent participant status within the Arctic Council. Indigenous Peoples are active in the Council's working groups where they add suggestions, comments, and recommendations for work needing to be undertaken concerning food security and its challenges.

The emphasis of maintaining Indigenous participation in these strategies are in order to create policies that align with their needs so that they can further benefit from the same outcome. Galloway-McLean expresses that, "programs being administered by non-indigenous peoples aimed at it mitigating and adapting to climate change have the potential to harmfully affect Indigenous livelihoods, as well as undermine their customary rights to lands and resources if not properly designed nor implemented."[219] Therefore, it is of interest to incorporate Indigenous Peoples and their traditional knowledge into the programs and strategies where they can best assess the concerns that may be harmful to their way of life and for successful mitigation and adaptation strategies in

[215] Galloway-McLean, Kirsty, "Advance Guard: Climate Change Impacts…", op. cit., p. 6.
[216] International Indigenous Peoples' Forum on Climate Change. "IIPFCC Statement to SBI" Bonn, Germany. May, 12, 2015. http://www.indigenousclimate.org/index.php?option=com_content&view=article&id=180%3Aiipfcc-statement-to-sbi&catid=3%3Anews&lang=es. Accessed. April, 4, 2016.
[217] Galloway-McLean, Kirsty, "Advance Guard: Climate Change Impacts…", op. cit., p. 6.
[218] Par. 136 of the United Nations Framework Convention on Climate Change, "Adoption of the Paris Agreement." FCCC/CP/2015/L.9/Rev. 1, December, 12, 2015.
[219] Galloway- McLean, Kirsty, "Advance Guard: Climate Change Impacts…", op. cit., p. 6.

the Arctic. Thus, Indigenous Peoples can hone strategies for efficiency in overcoming further threats to food security.

2.3 Procedural Measures to Help Improve Food Security or Safeguard Contamination

Food safety, contamination and security are all global and international issues. In which case, a number of procedural measures are entrenched internationally, nationally, regionally, and locally to advance food security, safeguard contamination and further promotion of human health. Some of the procedures currently in place to safeguard contamination and enhance food security, directly and indirectly related to that Arctic, comprise of both the World Trade Organization and the European Union.

2.3.1 World Trade Organization

The World Trade Organization (WTO) is a body of the United Nations that deals with the trade between countries. According to their website, they administer trade agreements, handle disputes, cooperate with organizations, and monitor trade policies.[220] As of November 30, 2015 there are 162 countries that hold membership, including all eight Arctic States, with Russia entering as recently as 2012. It is well known that the WTO remains one of the most significant bodies in global trade. In addition, food is one of the biggest trade sectors in the world, valued at between $300 - $400 Billion USD annually, in which case, proper measures covering food security and food contamination are expected.[221]

The FAO outlines that under the World Trade Organization Agreement there have been two additional agreements, the Application of Sanitary and Phytosanitary Measures (SPS Agreement) and the Agreement on Technical Barriers to Trade (TBT Agreement). These documents set important parameters governing the adoption and implementation of food quality and safety measures.[222] The SPS Agreement in particular, is designed to ensure that states apply the measures to protect human, animal and plant health based on risk assessment.[223] The FAO highlights that under the SPS agreement, "the Codex Alimentarius was adopted as the source of all international standards on food, highlighting the importance of food safety and food trade in today's world."[224]

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[220] World Trade Organization, "The WTO." https://www.wto.org/english/thewto_e/thewto_e.htm. Accessed April, 6, 2016.
[221] Food and Agriculture Organization of the United Nations, "Codex and the international food trade." http://www.fao.org/docrep/w9114e/w9114e06.htm. Accessed April, 6, 2016.
[222] Food and Agriculture Organization of the United Nations, "Law and Sustainable Development since Rio – Legal Trends in Agriculture and Natural Resource Management." Rome, 2002, p. 31.
[223] Ibidem.
[224] Ibidem, p. 32.

More specifically, the objectives of Codex are designed to protect the health of consumers, to ensure fair practices in food trade and to promote the coordination of all food standards work undertaken by national governments.[225] Codex plays an important role, whereby consumers can trust the safety and quality of the food products they buy and importers can trust that the food ordered will be in accordance with their specifications.[226] It is suggested that WTO members should base their national standards on international standards, guidelines and other recommendations adopted by Codex where they exist.[227] However, the notable words highlighted here are, "guidelines" and "recommendations," and unfortunately, are not mandatory for countries party to the agreements, but remains a base for additional efforts to enhance food security and safeguard contamination in national legislation.

2.3.2 European Union

The European Union (EU) as a regional body and supra-national organization, committed to playing a bigger role in Arctic issues through increased participation in recent years.

In terms of food, the EU has specific regulations that safeguard human health, which are binding on all 28 member states. One example is regulation No. 178/2002, which provides a basis for the high level of protection for human health in order to restore consumer confidence in food.[228] Regulations on food are important where they act as a protection mechanism on food sold for human consumption. The FAO confirms that, "this Regulation sets out the basic framework of guiding principles and definitions for future European food law, on establishing the European Food Safety Authority and laying down procedures on matters of food and feed safety."[229] An important element of the Regulation is the responsibility of food and feed businesses to ensure that only safe food and feed is placed on the market.[230] Food is deemed unsafe if potentially injurious to health, unfit for human consumption or contaminated in such a manner that it would unfit for human

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[225] U.S. Food and Drug Administration, "International Cooperation." http://www.fda.gov/Food/InternationalInteragencyCoordination/InternationalCooperation/default.htm. Accessed April, 23, 2016.
[226] Food and Agriculture Organization of the United Nations, "About Codex." February, 1, 2016. http://www.fao.org/fao-who-codexalimentarius/about-codex/en/. Accessed April, 6, 2016.
[227] Food and Agriculture Organization of the United Nations, "Law and Sustainable Development...", op. cit., pp. 31-32.
[228] Par. 22 of the European Council, "Laying down the general principles and requirements of food law, establishing the European Food Safety Authority and laying down procedures in matters of food safety." EU Regulation No. 178/2002.
[229] Food and Agriculture Organization of the United Nations, "Law and Sustainable Development...", op. cit., p. 36.
[230] Par. 27 of the European Council, "Laying down the general principles and requirements of food law, establishing the European Food Safety Authority and laying down procedures in matters of food safety." EU Regulation No. 178/2002.

consumption.[231] The European Union (in this case the European Commission) has gone above the set international guidelines to provide sufficient regulations and procedural measures on food.

Regarding the Arctic, gaps remain in WTO and EU agreements and regulations protecting the trade, sale, and consumption of food bought in the world market. However, these measures fail to safeguard the traditional food that is harvested from the land or sea by Indigenous Peoples. This food is caught locally and consumed locally and most times not for sale through stores or monitored markets. In which case, traditional foods often do not enter the supply chain by which they would be properly tested and checked for safe consumption, free from contaminants and ensuring that it meets adequate standards. As previously discussed and widely known, there are severe issues regarding the contamination of traditional food, whereas, instruments in place by the EU and WTO only guarantee the safeguarding of bought food in international and national markets.

A separate issue concerning the EU, WTO and Indigenous Peoples revolves around the EU seal ban that was placed on seal products entering the European markets. This had caused outrage by many Indigenous communities that use traditional seal hunting as a livelihood. One such claim from the Inuit, affirmed that there is no valid conservation or humane harvesting argument to justify the EU ban, despite the exemptions put in place for seal products from hunts traditionally conducted by them and other Indigenous communities.[232] In fact, the price of seal fur had reduced 64% from 2007 levels since the legislation was proposed.[233] This price had enormous impacts on Indigenous Peoples who sell their products abroad. The Inuit especially, "have been hunting seals to sustain themselves for food, clothing and trade for many generations. According to them, the exemptions are unclear, flawed and unfair, and would eventually cause economic damage to the Inuit peoples since no clear distinction can be made between Inuit and other commercial hunts."[234] However, it is important to note that the goal of the ban was not necessarily to put pressures on the Indigenous Peoples, in fact Kamrul Hossain expresses that it is, "seen as protecting the subsistence rights of Inuit and other Indigenous Peoples; they do not prevent the fact that such a measure leads these people to be deprived of a major part of their economic subsistence."[235] There are trade

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[231] Art. 14 of the European Council, "Laying down the general principles and requirements of food law, establishing the European Food Safety Authority and laying down procedures in matters of food safety." EU Regulation No. 178/2002.
[232] EC 2009: Article 3 *In: Hossain, Kamrul, "The EU ban on the import of seal products and the WTO regulations: neglected human rights of the Arctic indigenous peoples?" Polar Record 49.02, 2013:154-166, p. 156.*
[233] International Centre for Trade and Sustainable Development, "European Court Decision Reinstates EU Seal Ban." *Bridges Trade BioRes*, Vol 10: No. 20, November, 8, 2010, p. 10.
[234] Hamilton-Smith, 2010, *In: Hossain, Kamrul, "The EU ban on the import of seal products and the WTO regulations: neglected human rights of the Arctic indigenous peoples?" Polar Record 49.02 2013:154-166, p. 156.*
[235] Hossain, Kamrul, "The EU ban on the import of seal products and the WTO regulations: neglected human rights of the Arctic indigenous peoples?" *Polar Record* 49.02, 2013:154-166, p. 163.

regulations that have worked in favor of the Indigenous Peoples, however, this is one that had an enormously negative impact.

2.4 Conclusion

The more time, effort, and financial support that is provided to mitigate climate change and food insecurity, the less likely people will have to adapt to the unfortunate circumstances. Even if Indigenous Peoples are displayed as having the best ability to adapt to the changing circumstances, mitigation needs to be kept as a priority so that adaptation is never an option. Mitigation, adaptation and the promotion of sustainable development through different mechanisms continue to provide support for environmental problems in the Arctic both directly or indirectly. From the above discussions, there are wide ranges of tools used to promote food security some of which are in the forms of legal-binding instruments, soft-law measures, international agreements, and regional regulations. Policy makers are using these tools for the creation of both hard and soft law documents, with the assistance of Indigenous actors, to further reduce and eliminate food security in the wake of many environmental threats. Often times these tools are far reaching and have impacts where they are not intended as displayed through EU regulations, however, in general, their overall objective can be identified as to protect and promote food security.

Chapter 3: Food Security from a Human Rights Perspective

The Office of the United Nations High Commissioner for Human Rights (OHCHR) defines human rights as, "rights inherent to all human beings, whatever our nationality, place of residence, sex, national or ethnic origin, colour, religion, language, or any other status. We are all equally entitled to our human rights without discrimination. These rights are all interrelated, interdependent and indivisible."[236] Food security has evolved from a very vague definition by Roosevelt in 1943, to a legally recognized human right in the international realm. In order to discuss food security from a human rights perspective, it is important to analyze the right to food and food as a cultural right. These two rights must therefore be privileged to all human beings regardless of nationality, origin, religion, etc. Food security will be analyzed in the context of Indigenous human rights, once again focusing on the Arctic and its protection in both the national and international realms.

Many rights have been incorporated on the international level; however, the problem remains through implementation on the national level. To ease these challenges of applying the

[236] Office of the United Nations High Commissioner for Human Rights, "What are Human Rights?" http://www.ohchr.org/EN/Issues/Pages/WhatareHumanRights.aspx. Accessed April, 25, 2016.

right to food in the national context, a number of resources have been developed. The FAO Member States have established a set of voluntary guidelines to support the *Progressive Realization of the Right to Adequate Food in the Context of National Food Security*, which was subsequently adopted by the FAO Council.[237] The objective of the Guidelines are to provide practical direction to states concerning appropriate measures of the right to adequate food in the national food security context.[238] Section 8.1 is worth indicating as it specifies the access to resources and assets, with special attention to groups such as pastoralists, Indigenous Peoples and their relation to natural resources.[239] This is the only reference to Indigenous Peoples throughout the whole document. The Guidelines are strictly voluntary but still a good resource for states on implementing the right to food at the national level. In addition to the right to food and the right to culture, there are numerous human rights closely associated, such as the right to life, right to health, and right to water. However, for the purposes of this paper, I will primarily be discussing the right to food and the right to culture as they particularly relate to Indigenous rights.

3.1 Is food protected as a basic human right?

Food security is best displayed through the right to food or the right to adequate food in most cases. The right to food can also be recognized inside broader human rights instruments nationally and internationally. This right is an inclusive right, therefore, not strictly a right to a minimum ration of calories or nutrients but all the nutritional needs of a person to live a healthy and active life and the means to access or attain them.[240] The right to food consists of three elements; availability, accessibility, and adequacy:[241]

- *Availability* in this sense means that food should be available either through production of food, by cultivating land or animal husbandry, or through other ways of obtaining food; such as fishing, hunting or gathering but also sales, markets and shops.
- *Accessibility* means the economic and physical access to food must be guaranteed. Economic meaning it must be affordable without compromising other basic needs. Physical

[237] Damman, Siri, et al., "Indigenous peoples' nutrition transition in a right to food perspective." *Science Direct*, Food Policy 33: 135-155, 2008, p. 139.
[238] Food and Argricultural Organizationof the United Nations, "Voluntary guidelines to support the progressive realization of the right to adequate food in the context of national food security." Rome, 2004, p. iii.
[239] Ibidem, p. 16.
[240] Office of the United Nations High Commissioner for Human Rights, "The Right to Adequate Food." *Fact Sheet No. 34,* p. 2.
[241] Office of the United Nations High Commissioner for Human Rights, "Toolkit on the Right to Food." http://www.ohchr.org/EN/Issues/ESCR/Pages/Food.aspx. Accessed April, 25, 2016.

in terms of the food being accessible to all, including those physically vulnerable and children.

- *Adequacy* of the food must satisfy the dietary needs, taking into account factors such as the individual's age, health, occupation, etc. The food should be safe from adverse substances and be culturally acceptable.

All three elements are important in establishing the right to food as a basic human right. In which case, a large number of instruments are established on the national and international level that incorporate these elements and recognize this right for all peoples. Whereby, the governments and other duty bearers are under an obligation to respect, protect and fulfil human rights, and are responsible for ensuring legal entitlements and remedies in case of non-fulfilment.[242]

The right to food is also displayed through two norms, the fundamental right of everyone to be free from hunger and the right to adequate food, which are substantially different from one another. The freedom from hunger is the only one that qualifies as a, 'fundamental' or an 'absolute' standard by the ICESCR.[243] Whereas, Dubravka Bojic Bultrini explains, "the right to adequate food is much broader – it implies the existence of such an economic, political and social environment that will allow people to achieve food security by their own means."[244] Therefore, the right to food as part of an adequate standard of living and a fundamental right to be free from hunger acknowledges that there are many factors such as poverty, healthcare, etc. and not strictly limited to accessibility; therefore, creating a strong link between the right to food and other human rights.[245] It is clear that there is an abundance of factors that must be fulfilled in order to protect food as a human right.

The right to food is not limited to one individual; it must be viewed as part of the collective. An individual right refers to those rights enjoyed by an individual person and separate from others, while, collective rights are referred to those enjoyed by the group as a whole. In current human rights treaties the individualistic approach of rights and rights-holders are portrayed the most.[246] This narrow focus in current treaties can pose a problem to Indigenous Peoples who usually self-

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[242] Office of the United Nations High Commissioner for Human Rights, "Human Rights: Handbook for Parliamentarians, Office of the United Nations High Commissioner for Human Rights (OHCHR) and Inter-Parliamentary Union (IPU)." Geneva, 2005, p. 1.
[243] Bultrini, Dubravka Bojic, "Guide on Legislating for the Right to Food." *Food and Agriculture Organization of the United Nations,* Rome, 2009, p. 14.
[244] Ibidem, p. 15.
[245] Ibidem.
[246] United Nations Regional Information Centre for Western Europe, "Individual vs. Collective Rights." http://www.unric.org/en/indigenous-people/27309-individual-vs-collective-rights. Accessed April, 25, 2016.

identify as the individual, connected to the larger community in which they belong.[247] Even though Indigenous Peoples respect their guaranteed individual rights under the current human rights mechanisms, they often advocate for further protection of collective rights.[248] Such is the case under the right to food, first enjoyed by individuals, but Indigenous Peoples frequently exercise this right collectively.[249] By requiring additional collective rights under the right to food, Indigenous Peoples are continually reshaping the boundaries of human rights. It is understood in the Universal Declaration of Human Rights (UDHR) that the right to food is a right that can be enjoyed collectively, which is important for all Indigenous Peoples.[250]

As briefly mentioned above, the 1948 UDHR made the first documented reference on the right to food, stating in Art. 25, "everyone has the right to a standard of living, adequate health and well-being of himself and of his family, including food, etc."[251] At the same time, there was a formation of broader human rights hailing from the overarching terms of the freedom from fear and freedom from want. It is important to assess the right to food in a broader human rights perspective as many human rights overlap with the right to food. Additionally, the 1966 International Covenant on Civil and Political Rights (ICCPR) is one of the most referred to international documents addressing food as a human right. The ICCPR is widely signed and ratified by the international community, including all eight Arctic States. Art. 27 of the ICCPR best outlines its human rights capacity referring to Indigenous Peoples rights to traditional food. It describes that, "in those States in which ethnic, religious or linguistic minorities exist, persons belonging to such minorities shall not be denied the right, in community with the other members of their group, to enjoy their own culture, to profess and practice their own religion, or to use their own language."[252] Much of the right to food for Indigenous Peoples are connected to their cultures and traditions where practices, such as canning and harvesting, strengthens their identity. In addition, it recognizes the collective rights of a minority by noting the communities and groups. Art. 11(1) of the International Covenant on Economic, Social and Cultural Rights (ICESCR) accompanies the ICCPR, through which it recognizes the right to an adequate standard of living, including adequate food. Furthermore, Art. 11(2) affirms, states parities recognize the fundamental right of everyone to

[247] Ibidem.
[248] Ibidem.
[249] Knuth, Lidija, "The right to adequate food and indigenous peoples: How can the right to food benefit indigenous peoples?" *Food and Agriculture Organization of the United Nations*, Rome, 2009, p. 17.
[250] Ibidem.
[251] Art. 25 of the United Nations General Assembly, "Universal Declaration of Human Rights." 217 A (III), December, 10, 1948.
[252] Art. 27 of the United Nations General Assembly, "International Covenant on Civil and Political Rights." UNTS, vol. 999, December, 16, 1966.

be free from hunger, individually and through international co-operation and by taking the measures and programmes which are needed.[253] All Arctic States have signed and ratified the ICESCR except the United States. In addition, the Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW) explained through Art. 12, the right of women to have protection and adequate nutrition during pregnancy and lactation.[254] Lastly, Art. 27 of the Convention on the Rights of the Child (CRC) specifies the right to an adequate standard of living for the child's physical, mental, spiritual, moral and social development; of which includes nutrition and food. All of these documents provide protection of the right to food from different human rights angles.

Bultrini observes, that the hard law covenants and conventions have been "complemented by a number of soft-law documents which contributes to a better overall understanding and interpretation of the right to food and the obligation of States."[255] This is particularly the case for instruments developed within the FAO, the United Nations Commission on Human Rights (since 2006, the UN Human Rights Council) and the Committee on Economic, Social and Cultural Rights (CESCR).[256] All three organizations under the United Nations have different responsibilities and interests; however, all of their work surrounds human rights and the right to food. These organizations are useful in providing solutions and recommendations to governments in a non-obligatory setting. The FAO has produced numerous reports and hosted summits, all contributing to the promotion of global food security. Their work has enabled comprehensive recommendations for states in implementing such measures, two well-known reports are the *guide for legislating the right to food* [257] and *Constitutional and Legal Protection of the Right to Food around the World*.[258] Bultrini believes the Right to Food Guidelines that can help governments to design appropriate policies, strategies and legislation; although voluntary, the guidelines can have a significant influence on state policies.[259]

The Human Rights Council within the UN has created a special position called the Special Rapporteur on the Right to Food, where Bultrini explains that it clarifies, "the contents of the right

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[253] Art. 11 of the United Nations General Assembly, "International Covenant on Economic, Social and Cultural Rights." UNTS, vol. 999, December, 16, 1966.
[254] Art. 14 of the United Nations General Assembly, "Convention on the Elimination of All Forms of Discrimination Against Women." UNTS, vol. 1249, December, 18, 1979.
[255] Bultrini, Dubravka Bojic, "Guide on Legislating...", op. cit., p. 11.
[256] Ibidem, p. 11.
[257] Ibidem.
[258] Knuth, Lidija and Margret Vidar, "Constitutional and Legal Protection of the Right to Food around the World." *Food and Agriculture Organization of the United Nations*, Rome, 2011.
[259] Bultrini, Dubravka Bojic, "Guide on Legislating...", op. cit., p. 12, Box. 2.

to food by giving meaning to the government obligations in respect to this right."[260] This is fundamental in assisting countries to better comprehend the outcomes of adopting necessary measures on the right to food. The Special Rapporteur has conducted a number of specific reports on certain countries, because of scheduled visits to these places, whereby they made strong recommendations for enhancing food security. One report, conducted on a visit to Canada, found that the country's record on civil and political rights had been impressive.[261] However, a lack of efforts in economic and social rights and more importantly the failure of constitutional or legal protection on the right to food was also discovered.[262] The report concluded with a number of recommendations for the Canadian Government to enhance and address the food security situation within their country.

The CESCR has adopted General Comment 12 on the right to adequate food as a valuable resource for countries, where Bultrini believes, "it also outlines some detail the normative content of this right, states' obligations, and implementation at the national level."[263] Bultrini further states, "although general comments by the CESCR are not legally binding, they give a highly commanding interpretation of the rights contained in the ICESCR and are general followed and respected by Sates Parties."[264]

There are many national and international instruments designed and put in place to up keep and protect food as a basic human right. The right may be well protected on the international level through legally-binding instruments such as the ICCPR, CRC and ICESCR, however, for them to be effective it must be either implemented into national legislation, or be registered in customary law in order to further bind states' without the need to sign or ratify international instruments. Bultrini is convinced that the, "right to food or the right to be free from hunger is a part of customary international law,"[265] however, this remains uncertain and widely contested. Therefore, in order to grasp a better picture, one must look in depth at specific states and their devotion towards implementing the right to food within their own jurisdictions.

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[260] Ibidem, p. 11.
[261] Human Rights Council, "Report of the Special Rapporteur on the right to food, Olivier De Schutter: Mission to Canada." A/HRC/22/50/Add. 1, December, 2012.
[262] Ibidem.
[263] Bultrini, Dubravka Bojic, "Guide on Legislating...", op. cit., p. 11.
[264] Ibidem.
[265] Ibidem.

To look more in depth at the State level, a study was conducted by the FAO that looking at individual countries and their acknowledgement of the right to food.[266] In this study, four broad categories are analyzed in constitutional recognition of the right to adequate food. The reason for centring on the constitution is the basis that it is the strongest form of legal protection and consider it fundamental or supreme law of the country.[267] The four broad categories are:

1) *Explicit protection* of the right to adequate food or freedom from hunger is viewed where a state has adopted provisions containing explicit recognition of the right; which can come in two main forms, either for the entire population or solely for specific groups (i.e. children). Currently no Arctic State has adopted this approach.
2) *Implicit protection* of the right to adequate food or freedom from hunger has a few selected human rights generally considered to incorporate, including well-being, development, etc. The implicit protection through broader human rights was not collected for this study and thus far, only Iceland and Finland have conformed to implicit protection in their constitution.
3) *Provisions that provide directly or implicitly for the right to food in the form of a Directive or principles of state policy*; these provisions are recognized as those non-directly enforceable by a court and more in the line of pledges but represent an overarching objective of the state. This is the most common form among Arctic States see through Denmark, Finland, Norway, Russia, and Sweden.
4) *Status of international obligations in the national legislative order*; through means of direct applicability of international instruments at the national level, or the recognition of international commitments having the same status as constitutional provisions, or dominance of international obligations over national laws; all of which are important means to protect the right to adequate food at the national level. Only Russia conforms to this category.

Overall, there is not one country in the Arctic conforming to the explicit right to food in their constitution, in fact, there are only a small number of countries around the world that have done so. Canada, for example, has some of the most pressing matters regarding food security among their Indigenous populations in the Arctic, which could be closely associated with a failure to acknowledge the right to food in their constitution. The only notable recognition that Canada gives is through signed and ratified international instruments, such as the ICCPR and ICESCR. Siri

[266] Food and Agriculture Organization of the United Nations, "The Right to Food around the Globe: Methodology." http://www.fao.org/right-to-food-around-the-globe/methodology/en/. Accessed March 16, 2016
[267] Ibidem.

Damman, et al. points out that, "Indigenous Peoples are often victims of discrimination and national policies and actions that do not sufficiently address and respect their interests, culture and lifestyle."[268] This is prominent in many Arctic countries when they fail to implement the necessary measures to protect their rights.

Damman, et al. additionally suggests that, "the content of Indigenous Peoples' right to adequate food should therefore not be interpreted narrowly, but within the context of all other human rights, including Indigenous Peoples' special rights."[269] Therefore, I will conclude, that the Right to Food as a human right is well documented and implemented in a number of recognized instruments, such as the ICESCR and ICCPR. The three elements of the right to food, adequacy, availability and access are placed in these documents in one form or another. In addition, to advocate for these rights, there are non-binding recommendations and guidelines for implementing the right to food in national legislation, and well respected among Arctic States. Although most Arctic States do recognize the right to food in their constitution it is done in varying degrees, in which some have completely failed in this area. Despite everything, I remain optimistic that there is well-rounded protection of the right to food as a human right in international law, however, much more needs to be done in assisting and pressuring states to act at the national level.

3.2 Is food protected as a cultural right?

Food must also be looked at through a cultural lens and the right to culture, because it is significant for the well-being and way of life for Indigenous Peoples. Therefore, it is essential to analyze current instruments further protecting the right to food as a cultural right in the same realm as human rights in national and international law.

Culture, is described by United Nations Educational, Scientific and Cultural Organization (UNESCO) as, "the whole complex of distinctive spiritual, material, intellectual and emotional features that characterize a society or social group. It includes not only the arts and letters, but also modes of life, the fundamental rights of the human being, value systems, traditions and beliefs."[270] The right to culture is an imperative part of Indigenous livelihoods, where their culture is always under constant threat from the dominant society.[271] Culture is deeply engrained in everything Indigenous Peoples do and how they go about their daily tasks. Damman, et al. describes that

[268] Damman, Siri, et al., "Indigenous peoples' nutrition...", op. cit., p. 138.
[269] Ibidem.
[270] United Nations Educational, Scientific and Cultural Organization, "Mexico City Declaration on Cultural Policies." *World Conference on Cultural Policies*, Mexico City, 1982.
[271] Knuth, Lidija, "The right to adequate food...", op. cit., p. 15.

sometimes, "the mainstream dominating cultures that states represent are often a threat to the traditional cultures, including the food cultures, of Indigenous Peoples."[272]

To best address the right to culture, Art. 27 of the ICCPR must referred to again, where, "in those States in which ethnic, religious or linguistic minorities exist, persons belonging to such minorities shall not be denied the right, in community with the other members of their group, to enjoy their own culture, to profess and practise their own religion, or to use their own language."[273] This definition is sought to be the most commonly referred to when concerning Indigenous Peoples and their right to culture through international law. However, while there are a number of international and regional human rights instruments that have made specific reference to culture, the problem lies with Indigenous cultural claims and how they have not been fully accommodated in international law.[274] Cultural rights are sometimes seen as the underdeveloped part of human rights and often ignored in the process.[275]

Similar to the above discussion on the right to food, the right to culture is an autonomous right that includes both individual and collective rights; it also requires the fulfillment, exercise, and enforcement of all human rights.[276] Where Damman, et al. reveals that, "culture tends to be shared and a collective feature, therefore, it is believed to add an extra dimension to the individual's right to culture."[277] The collective rights of Indigenous Peoples' including owning and using the land; resources; the right to free, prior and informed consent, are all crucial for the continuation of their cultures.[278] Many of these collective and individual rights are also interconnected with the right to culture and right to food.

The connection between the right to food and the right to culture best explained through the right to land, where the right to culture gives the right to subsistence activities, which in turn is substantial for the realization of Indigenous Peoples' right to food.[279] Damman, et al. explicitly

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[272] Damman, Siri et al., "Human Rights implications of Indigenous Peoples' food systems and policy recommendations." *In: Kuhnlein, Harriet V., et al. Indigenous peoples' food systems and well-being: interventions and policies for healthy communities. Food and Agriculture Organization of the United Nations, FAO, 2013, p. 260.*
[273] Art. 27 of the United Nations General Assembly, "International Covenant on Civil and Political Rights." UNTS, vol. 999, December, 16, 1966.
[274] Xanthaki, Alexandra, "Indigenous Rights and United Nations Standards, Self-determination, Culture and Land." Cambridge University Press, 2007, p. 227, *In: Knuth, Lidija, "The right to adequate food and indigenous peoples: How can the right to food benefit indigenous peoples?" Food and Agriculture Organization of the United Nations,* Rome, 2009, p. 15.
[275] Symonides, Janusz, "Cultural rights: a neglected category of human rights." *50 International Social Sciences Journal,* UNESCO, 1998, p. 559.
[276] Knuth, Lidija, "The right to adequate food ...", op. cit., p. 16.
[277] Damman, Siri et al., "Human Rights implications...", *op. cit.,* p. 263.
[278] Ibidem.
[279] Ibidem, p. 15.

states, "if Indigenous Peoples are denied the land and the food on the land, their culture will dissolve."[280] Traditional ways of gathering food, hunting, and fishing all demonstrate the way of life that nurture Indigenous culture, whereby food and culture demonstrate a strong interconnectedness.[281] The way that Indigenous Peoples obtain traditional food and the methods they use, are deeply rooted in their culture. Food is a subject of storytelling and well documented in the oral histories of some Indigenous Peoples. Some food must also be culturally acceptable where Lidija Knuth describes it as, "an element of the normative content of the right to food and it is of particular relevance to Indigenous Peoples."[282] It is undeniable that traditional food is sturdily associated with cultural identity and at the core of Indigenous cultures and economies.[283] The Special Rapporteur on the right to food declares the right as having, "regular, permanent and free access, either directly or by means of financial purchases, to quantitatively and qualitatively adequate and sufficient food corresponding to the cultural traditions of the people to which the consumer belongs, and which ensures a physical and mental, individual and collective, fulfilling and dignified life free of fear."[284] This explicitly demonstrates the right to food is an individual, collective and cultural right, displaying the connection between food and culture.

In human rights law, of which includes both the right to food and culture, Damman, et al. clarifies that, "Indigenous individuals should enjoy the same rights as non-indigenous individuals, while at the same time their right to their own culture is respected and protected."[285] In regards to food and culture, Indigenous Peoples should not be discriminated upon and treated the same as non-indigenous. Damman, et al. articulates that, "Indigenous Peoples are often victims of discrimination and national policies and actions that do not sufficiently address and respect their interests, culture and lifestyle."[286] Providing further explanation that, "this is the case with many agricultural, energy and industrial policies, and even national food security and development plans, are poorly adapted to Indigenous Peoples' needs and culture."[287] Given the example of the Canadian National Food Guide, which specifically supports Indigenous food use, but access to this food is seldom

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[280] Ibidem.
[281] Par. 21 of the United Nations General Assembly, "The right to food." *Interim report of the Special Rapporteur on the right to food, Jean Ziegler to the General Assembly*, 60th Session A/60/350, September, 12, 2005.
[282] Knuth, Lidija, "The right to adequate food...", op. cit., p. 17.
[283] Damman, Siri, et al., "Indigenous peoples' nutrition...", op. cit., p. 138.
[284] Office of the United Nations High Commissioner for Human Rights, "The Special Rapporteur on the right to food." http://www.ohchr.org/EN/Issues/Food/Pages/FoodIndex.aspx. Accessed April, 26, 2016.
[285] Ibidem, p. 260.
[286] Damman, Siri, et al., "Indigenous peoples' nutrition...", op. cit., p. 138.
[287] Damman, Siri, et al., "Human Rights implications...", op. cit., p. 261.

addressed.[288] Comprehensive national policies need to be drafted that properly determine the food and cultural needs of Indigenous Peoples.

The existing law protecting food as a cultural right is best explained through the International Labor Organization (ILO) document no. 169. This document is one of the most important for Indigenous Peoples as it is legally binding and recognizes many rights, including that of self-determination. Art. 23(1) acknowledges, "handicrafts, rural and community-based industries, and subsistence economy and traditional activities of the peoples concerned, such as hunting, fishing, trapping and gathering, shall be recognised as important factors in the maintenance of their cultures and in their economic self-reliance and development."[289] This explains the close relationship between traditional activities related to methods of obtaining food. Art. 23 further indicates, "governments shall, with the participation of these people and whenever appropriate, ensure that these activities are strengthened and promoted."[290] The use of the word "shall" in this context provides that governments have a duty or responsibility for promoting and strengthening these traditional activities. Art.13(1) of ILO 169 also explains that "governments shall respect the importance of cultures and spiritual values of the peoples concerned and their relationship with land and/or territories in which they occupy or use, and particularly the collective aspects of this relationship."[291] The significance of the article is through the collective aspects of food, where Indigenous rights are not strictly individual in nature but collective as well. Due to the legally binding nature of the document and obligations on states regarding the rights of Indigenous Peoples, relatively few countries have fully signed and ratified the document, of which only Denmark and Norway in the Arctic.

Each treaty body establishes their own interpretation of its respective human rights treaty in the form of "general comments" or recommendations.[292] General comments are the provisions of legally binding treaties; however, they are not legally binding themselves, instead they are recognized and held in high regard among states. General Comment (GC) 12 by the Committee on Economic, Social and Cultural Rights (CESCR) made its own recommendations on the right to adequate food. In this regard, it reflects the right to adequate food as "the availability in quantity and quality to satisfy the dietary needs of individuals, free from adverse substances, and acceptable

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[288] Ibidem.
[289] Art. 23(1) of the International Labour Organization, "Indigenous and Tribal Peoples Convention, C169" June, 27, 1989.
[290] Ibidem.
[291] Ibidem, Art. 13 (1).
[292] Office of the United Nations High Commissioner for Human Rights, "Human Rights Treaty Bodies – General Comments." http://www.ohchr.org/EN/HRBodies/Pages/TBGeneralComments.aspx. Accessed April, 26, 2016.

within a given culture and the accessibility of such food in ways that do not interfere with the enjoyment of other human rights."[293] Therefore, food must be acceptable within a given culture and this must fully satisfy their needs. However, this may be problematic when you look at the influx of western food entering the Arctic where questions are likely to persist on how culturally acceptable this food might be.

The United Nations Declaration on the Rights of Indigenous peoples (UNDRIP) is a non-binding document that addresses and closes the gap on a number of Indigenous issues. Damman, et al. notices that it is, "gathering political momentum where most countries are now willing to accept, in theory, not just the existence of Indigenous Peoples' rights, but the need for progressive stands on land rights and self-determination."[294] The UNDRIP recaps the "urgent need to respect and promote the inherent rights of Indigenous Peoples which derive from their political, economic and social structures and from their cultures, spiritual traditions, histories and philosophies, especially their rights to their lands, territories and resources." This is a powerful reminder overviewing the cultural and spiritual traditions of peoples in relation to lands and resources, of which food is a resource. It remains difficult to determining how much protection this document associates food as a cultural right, concerning its legal status; but Damman, et al. remains positive by arguing that, "reflecting this in national law and policy it would be a large step towards equity-based and culturally sensitive food security and health policies."[295]

3.3 Conclusion

To conclude, food in relation of the right to culture is familiar in international law, especially for Indigenous Peoples who often portray this relationship best. Explicitly, Damman, et al. points out, "the cultural rights of Indigenous Peoples have tended to be ignored, and government policies have often undermined rather than facilitated traditional production systems and Indigenous self-sufficiency."[296] These rights still tend to be on the backburner when compared to other human rights. Regardless, it is eminent that Indigenous Peoples' food cultures are an integral part of their right to adequate food, to be respected and protected by the state through law; whereby, states not only have an obligation to respect and fulfill this right, but are also obliged to take positive steps in facilitating and promoting traditional food cultures.[297] These actions should be done in an

[293] Par. 8 of the United Nations Committee on Economic, Social and Cultural Rights, "General Comment No. 12: The Right to Adequate Food (Art. 11 of the Covenant)" May, 12, 1999.
[294] Damman, Siri et al., "Human Rights implications...", op. cit., p. 278.
[295] Ibidem, p. 278.
[296] Damman, Siri, et al., "Indigenous peoples' nutrition...", op. cit., p. 151.
[297] Ibidem, p. 140, Table 1: Column 3.

appropriate manor and must be implemented in national legislation using the proper mechanisms. Furthermore, Damman et al. notes that "when the right to adequate food is seen in light of Indigenous Peoples' special rights, it emerges that governments should respect, protect and explicitly promote Indigenous Peoples' traditional diets and lifestyles, within the context of their right to culture and on the basis of self-determination or participation."[298] There are numerous mechanisms and opportunities to protect Indigenous food and culture through international law; however, how this plays out on the national level is difficult to assess. In respecting food as a human right, most Arctic states have sufficiently signed and ratified the ICESCR as well as the ICCPR, which identifies the obligations that states have in this regard. For those states that have not committed to such documents, they are clearly bound by the customary norms associated with these rights.

4. Arctic Council as a Platform for Food Security in the Arctic

There are indeed a grave number of threats facing food security in the Arctic through a variety of undertakings with corresponding suggestions on ways to improve food security in the region. Suggestions for improvement have involved advocated for a single legally binding treaty on food security, others have pushed for further hard law frameworks, while some wish to promote food through soft law followed by better monitoring on the ground level. However, in order efficiently address the threats to food security in the region, there must be sufficient mechanisms put in place. Such mechanisms could consist of specific organizations, projects or programs that would boost food security in the Arctic. Soft-law bodies in the Arctic have made some efforts on these grounds, including the Arctic Council, which has proven to be a potential actor or platform for carrying a degree of responsibility and ensuring the promotion of Arctic food security.

4.1 Why the Arctic Council?

The Arctic Council has been established in the Arctic region for over 20 years now and consistently adds to the stability there. The Council consists of member states, permanent participants, observers and other subsidiary bodies such as expert groups and task forces. They have produced a large variety of documents, reports, assessments, and recommendations to policy makers that focus on a wide range of issues. These issues are only dealt with on a soft-law basis through recommendation and suggestions; nevertheless, the Arctic Council is held in high regard

[298] Ibidem, p. 151.

and noticed as one of the main bodies for cooperation in the region. This is true where they continue to address policy makers, assess threats to the Arctic and be active in pressing issues, except those relating to military. [299]

The Council structure is unique, where it includes eight Arctic States, Russia, the United States, Canada, Finland, Norway, Sweden, Iceland, and Denmark. Six permanent participants consisting of mainly Indigenous organizations, the: Aleut International Association, Arctic Athabaskan Council, Gwich'in Council International, Inuit Circumpolar Council, Russian Association of Indigenous Peoples of the North, and Saami Council. Lastly, there are 12 non-arctic observer states and nine intergovernmental organizations, whose role is to observe the meetings of the Arctic Council and to propose projects and proposals. Within the Council, final decisions are made in consensus of all eight Arctic states. Over the past 20 years, Hasanat points out that "the Council has launch a number of programmes involving its member States, Indigenous Peoples' organisations, non-Arctic States, and governmental and non-governmental organisations on the international as well as regional levels."[300] Leona Aglukkaq considers the Arctic Council as "the most important intergovernmental Arctic forum, bringing the Arctic countries and Indigenous Peoples together to advance economic and social development and environmental protection in the region."[301] In addition to the Arctic Council are a number of additional soft-law bodies present, including the Northern Forum and the Barents-Euro Arctic Council (BEAC)/Barents Regional Council (BRC), however, their capacities seem quite limiting.

The Northern Forum was established to improve the quality of life of Northern peoples by sharing knowledge and experience to address common challenges, concerns, to support sustainable development and implement cooperative social economic initiatives.[302] Similar priorities as the Arctic Council, however, Hasanat argues, that the legal status of the Northern Forum, "is somewhat ambiguous: it has neither fulfilled the essential criteria of an international organization nor that of an intergovernmental cooperative body."[303] The Forum is still recognized by many, but this uncertainty is challenging. Additionally, Hasanat explains, "it has no special

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[299] Hasanat, Waliul, "Soft-law Cooperation in International Law…", op. cit., p. 193.
[300] Hasanat, Waliul, "Definitional Constraints Regarding Soft Law." *The Secretariat Asian-African Legal Consultative Organization,* New Delhi, Vol 3: 1 &2. March & June, 2007, p. 19.
[301] Aglukkaq, Leona, "The Arctic Council remains effective and strong." *The Globe and Mail*. April, 23, 2015. http://www.theglobeandmail.com/opinion/the-arctic-council-remains-effective-and-strong/article24072388/. Accessed April, 11, 2016.
[302] Northern Forum, "Mission and Structure." http://www.northernforum.org/en/the-northern-forum/about-the-northern-forum/mission-and-structure. Accessed April, 11, 2016.
[303] Hasanat, Waliul, "International cooperation in the Northern Forum: Emerging new norms in international law?" *Polar Record,* pp. 1- 15, April, 2011, p. 1.

position regarding Indigenous Peoples in terms of decision making or compliance with its mandates (as is the case in the Arctic Council) provides the impression that the forum is not serious about integrating Indigenous Peoples participating entities under its auspices."[304] The Forum, therefore, remains a place of discussion but with very little legitimacy to address any challenges in the Arctic as Indigenous participation is needed on all levels.

The Barents Euro-Arctic Region (BEAR) has two levels, the intergovernmental Barents-Euro Arctic Council (BEAC) and the inter-regional Barents Regional Council (BRC).[305] The overall objective is for sustainable development and regional cooperation, where both levels contain a number of Arctic member states, some Indigenous representatives, as well as Arctic and non-Arctic observer states. Problems with the BEAR, as an appropriate stage to address the food security in the Arctic, surrounds its limitation in scope. This organization focuses primarily on one specific region of the Arctic, representing only a small percentage of the Indigenous Peoples, and not all Arctic States are full members. However, on a positive note, they do have the Working Group of Indigenous Peoples (WGIP) that was created in 1995 to secure Indigenous rights, society, culture, language and much more. This group contains representatives of the Vepsian, Sami and Nenets peoples, which is a very small amount of the overall Arctic Indigenous Peoples. With that being said, I do not believe the BEAR would be the appropriate platform to address the threats food security across the Arctic region, nor internationally.

A number of states in the Arctic lack the effort to put the appropriate measures in place to deal with the food security situation of Indigenous Peoples. Quite simply, Hasanat describes member states as not often paying adequate attention to Arctic related issues in their national priorities, and consequently, Arctic inhabitants do not have enough influence in national policy-making.[306] As a result, it may be beneficial to have a well-respected organization fill the gaps that states fail to address. Fenge and Funston argue, "it is surprising that the Council has not acted more vigorously to engage northern interests, but again it is arguable that this is not the responsibility of the Council but rather of the individual Arctic states within their own national boundaries."[307] Unfortunately, it is important to keep in mind that the Arctic Council has limitations as well. The Arctic Council as a mechanism to fill gaps would not be to undermine the state's ability to protect its population and nor Indigenous rights when it comes to food, but rather a support mechanism to monitor and suggest areas for improvement in the food security agenda.

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[304] Ibidem, p. 13.
[305] Barents Euro-Arctic Council, "About Us." http://www.beac.st/en/About. Accessed April, 11, 2016.
[306] Hasanat, Waliul, "Towards Model Arctic-Wide Environmental...", op. cit., p. 149.
[307] Fenge, Terry and Bernard Funston, "The Practice and Promise of the Arctic Council." *Greenpeace*, April, 2015, p. 23.

The Arctic Council works with all Arctic Indigenous Peoples through their permanent participants to give them an increased voice in the international arena, by which, the inclusion of Indigenous Peoples at the decision-making table, noted as their strength.[308] In addition, Fenge and Funston remain positive that the Council has proven a success within the circumpolar world in terms of the technical work it has done and for its contributions,[309] although, it is unclear just how influential its technical reports have been in the world of decision and policy-making.[310] More so, it is uncertain how well the Arctic Council can address Indigenous legal rights, such as the right to food and the right to culture stemming from the right to food. Nevertheless, Koivurova indicates that, "the Arctic Council has remained a body that produces, via its working groups, technical recommendations, guidelines and influence."[311] Therefore, using its skills and strengths, the Arctic Council as a soft-law body is quite capable of addressing most gaps and challenges regarding food security.

4.2 Food Security Working Group

Through the above discussions and in suggesting that food security issues be directed through the Arctic Council, it will then require appropriate and sufficient mechanisms. In order to put food security at the forefront of the Arctic Council, and subsequently national policy-making, there must effective ways to address the issues, implement plans, and put instruments in place to deal with the challenges. Food security has recently been a topic of conversation during the Swedish Chairmanship between 2011 and 2013. In other areas of the Arctic, such as Canada, we have seen recent developments of a newly recognized working group on food security.

In 2012, at the first meeting of the Arctic Resilience Report Project Steering Committee, food security was brought forth.[312] The Arctic Resilience Report (ARR) is a science-based assessment that aims to understand the integrated impacts of change in the Arctic.[313] This Arctic Council project was approved following a workshop, where food security was suggested as a thematic focus, resulting as a priority issue leading to the development of further case study on the

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[308] Aglukkaq, Leona, "The Arctic Council remains effective and strong." *The Globe and Mail*. April, 23, 2015. http://www.theglobeandmail.com/opinion/the-arctic-council-remains-effective-and-strong/article24072388/. Accessed April, 11, 2016.
[309] Fenge, Terry and Bernard Funston, "The Practice...", op. cit., p. 30.
[310] Ibidem.
[311] Koivurova, Timo, "Limits and possibilities of the Arctic Council in a rapidly changing scene of Arctic governance." *Polar Record* 46 (237): 146–156, 2010, p. 148.
[312] The Arctic Council, "Meeting notes from the first meeting of the Arctic Resilience Report Project Steering Committee." Delta Centre-Ville, Montreal, April, 27-28, 2012.
[313] Arctic Resilience Report, "About." http://arctic-council.org/arr/about/. Accessed April, 27, 2016.

issue.[314] Ann Ragnhild Broderstad, the Assessment Integration Team (AIT) food security person, afterwards had proposed that the AIT oversee the incorporation of food security into the Arctic Resilience Report; and link it to the SDWG food security project.[315] Food security will now be one of the main themes in the ARR due in May, 2016.

The SDWG food security project above has been in collaboration with AMAP. Their work during the Swedish Chairmanship has produced a report outlining food and water security in the circumpolar north.[316] Lena Nilsson and Birgitta Evengård arrived at the conclusion that, "neither from an international, nor from an Arctic perspective, does it yet exist a golden standard manageable and feasible set of food and water security indicators to serve as a base for monitoring and policy-making, though there is an ongoing discussion on this issue within the FAO."[317] They do admit there is not one perfect solution, but it is agreed that ongoing discussion is needed. Moreover, this is only the first phase of the project, in which Lena Nilsson and Birgitta Evengård suggest, "in a second phase selected indicators of interest should be further developed by organized expert groups. An international joint effort to collect data from the Arctic nations and regions should then be performed, with the aim to reduce inequality and improve the service for all Arctic people."[318] Furthermore, they add that "continuing collaborations between the two health groups in the Arctic Council, especially concerning food related contaminants, use of existing biobanks, and future joint biosampling was considered necessary especially from a food security perspective. Concrete projects will be developed as main pillars of phase 2."[319] The establishment of an expert group would be a large leap in the right direction, and further collaboration between the SDWG and AMAP will allow for increased research on the subject. The Swedish Chairmanship has accomplished a great deal, and now it is important to continue this work.

In other advances, the Indigenous Peoples in Canada have also made some progress on this front, as recently as May, 2014. The Inuit Tapiriit Kanatami (ITK) represent and promote the interests of Inuit regarding various environmental, social, cultural and political challenges. The ITK was founded in 1971 as the national representative organization of Inuit in Canada.[320] They have also created an ad hoc working group specialized in food security; where ITK President Terry

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[314] The Arctic Council, "Meeting notes from the first...", op. cit., p. 3.
[315] Ibidem.
[316] Nilsson, Lena, and Birgitta Evengård, "Food and water security indicators in an Arctic health context." *A report by the AHHEG/SDWG, and the AMAP/HHAG during the Swedish chairmanship of the Arctic Council 2013,* 2011, p. iii.
[317] Ibidem, p. 45.
[318] Ibidem, p. V.
[319] Ibidem.
[320] Inuit Tapiriit Kanatami and the Inuit Circumpolar Council, Canada, "Inuit and the Right to Food." *Submission to the United Nations Special Rapporteur on the Right to Food for the Official Country Mission to Canada*, p. 4.

Audla describes the objective as, "to help improve the levels of food security among Inuit, we are collaborating with Inuit regions and other partners through the Inuit Food Security Working Group."[321] This is an important effort to take those recommendations by the Special Rapporteur on the right to food seriously in the Canadian North. The ITK and ICC explain that, "this working group will bring representatives from the four Inuit Land Claim Regions to foster dialogue and determine a collective course of action to advance programs and policies that will improve the right to food for Inuit in Canada."[322] In the past two years, they have already created a Nunavut Food Security Strategy, which focuses on six themes: country food, store-bought food, local food production, life skills, programs, community initiatives, policy, and legislation.[323] Moreover, the coalition for the strategy consists of government departments, Inuit organizations, non-governmental organizations and the private sector, by aiming implement the action plan over the next three years with a strong and critical focus on partnerships.[324] The working group and their development of a strategy on food security has made leaps to address the challenges and treats that are present, which may evolve to inspire other Indigenous groups to do the same.

The efforts of the Swedish Chairmanship have sparked noticeable interest inside the Council towards further projects, studies, expert groups, and resources concerning food security. Food security clearly crosses boundaries and there is no one clear solution to the problem in the Arctic, nor globally. Hasanat admits, "within the Council there are no crystal clear boundaries between the working groups however and this has sometimes made it difficult to determine the most suitable working group for certain projects or operations."[325] This may prove to be largely inefficient, with a number of groups that focus on overlapping themes but not necessarily covering the necessities of food security.

Therefore, it may be a good idea to channel the efforts of the Arctic Council into either a working group or a task force. A working group could put food security at the forefront of the Council's priorities, where Indigenous Peoples could participate and be a likely beneficiary of such a group. This could be beneficial towards communicating food contamination findings as a misunderstanding between traditional and scientific knowledge remains in some communities,

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[321] Inuit Tapiriit Kanatami, "ITK Commends the Release of the Nunavut Food Security Strategy." May, 6, 2014. https://www.itk.ca/media/media-release/itk-commends-release-nunavut-food-security-strategy. Accessed April, 28, 2016.
[322] Inuit Tapiriit Kanatami and the Inuit Circumpolar Council, Canada, "Inuit and the Right...", op. cit., p. 4.
[323] Inuit Tapiriit Kanatami, "ITK Commends the Release of the Nunavut Food Security Strategy." May, 6, 2014. https://www.itk.ca/media/media-release/itk-commends-release-nunavut-food-security-strategy. Accessed April, 28, 2016.
[324] Ibidem.
[325] Hasanat, Waliul, "Soft-law Cooperation in International Law...", op. cit., p. 193.

whereby a working group may help fill this void. Developments focused on food security are occurring in different areas of the Arctic with separate priorities, such as the SDWG, AMAP, and the Inuit Food Security Working Group. The creation of a single working group on food security, under the Arctic Council could incorporate all of these initiatives together under one roof, proving to be more efficient and productive in promoting the right to food in all Arctic States.

4.2.1 Task force addressing food security

A working group on food security under the Arctic Council would be an ideal and a likely solution to some of the challenges presented in this paper, however, it could prove to be a difficult task if some are seeking to merge working groups. Therefore, it might be appropriate to suggest the creation of a task force to address the subject. Fenge and Funston explain that, "efforts to introduce short-term task forces and expert groups has been seen as a significant development and structural innovation for the Arctic Council."[326] Task forces may be a much more efficient way to address the current challenges and better determine if a supplementary working group would be necessary.

In the last few years, there have been noticeable efforts through negotiations and workshops to make food security a priority. There is a lot of work that needs to be accomplished and could be more efficiently streamlined by a working group or task force within the Arctic Council. Timo Koivurova suggests that, "since the main work in the Arctic Council has been done in the working groups, especially via those that have functioned from the beginning of the AEPS cooperation, it is pertinent to study whether here we can detect a new set of priorities for the Arctic co-operation.[327] Food security, combined with new mechanisms and a proper strategy on food security, may formulate a new focus and set of priorities within the Council. The incorporation of Indigenous Peoples in working groups and the work of the Arctic Council with a focus on food security will likely benefit the region by further enhance the right to food in Arctic Countries.

4.3 Indigenous participation through the Arctic Council

The incorporation of Indigenous Peoples in the Council is regarded as a relatively new approach to international cooperation. Hasanat highlights that "this opportunity has allowed Indigenous Peoples to sit side-by-side with state officials and address the present and future challenges in the Arctic as well as to ensure their active involvement in the activities of the Council."[328] This is a unique and highly regarded model in the international community, which

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[326] Ibidem.
[327] Koivurova, Timo, "Limits and possibilities...", op. cit., p. 148.
[328] Hasanat, Waliul, "Soft-law Cooperation in International Law...", op. cit., p. 190.

could serve to enable Indigenous Peoples in finding a more reasonable status other than that of NGO.[329] Through this, Indigenous Peoples get to provide adequate funding and assistance to the Permanent Participants to advance their capacities in order to achieve "active participation and full consultation with the Arctic Indigenous representatives within the Arctic Council."[330] Koivurova and Heinämäki believe, "it was the establishment of the Arctic Council in 1996 that really clarified and enhanced the status of the Arctic Indigenous Peoples."[331]

The importance Indigenous participation in the Arctic, especially in matters that affect them, such as food security, is undisputable. Indigenous Peoples bring much experience and knowledge to the table allowing for much advancement in policy-making, research and projects. Their traditional knowledge adds another dimension to the discussions and work that is taking place in the Arctic. More so, Leona Aglukkaq views the Arctic peoples as the world's true Arctic experts, therefore, it is appropriate that their voices and experiences are heard.[332] Furthermore, Aglukkaq explains that, "recommendations have been developed to use traditional and local knowledge more consistently in the council's continuing work."[333] Indigenous participation in the Arctic Council is imperative for national and international policies but more importantly, so that challenges and threats to their survival are addressed. Koivurova and Heinämäki claim, "Indigenous Peoples regularly regard international law as a very important tool for the advancement of their political goals."[334] Koivurova and Heinämäki believe Indigenous participation in the Council, "is most likely possible because in many nation-states their opportunities for influencing political development are rather limited."[335] They both continue to acknowledge that, "the Council has accorded a unique role for the region's original occupants has certainly served its legitimacy and also contributed to a new way of perceiving how Indigenous Peoples should be involved in international policy-making."[336]

It is undisputable that Indigenous Peoples' food is impacted the most, despite being some of the most likely people to adapt to the changing circumstances around them. Therefore, it is imperative that Indigenous Peoples form part of the discussion surrounding policies, mechanisms and procedures to the food security situation they are facing. As previously mentioned, the

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[329] Koivurova, Timo and Leena Heinämäki, "The participation of indigenous peoples...", op. cit., p. 105.
[330] The Declaration Establishing the Arctic Council *In: Fenge, Terry and Bernard Funston, "The Practice and Promise of the Arctic Council." Greenpeace, April, 2015, p. 32.*
[331] Koivurova, Timo and Leena Heinämäki, "The participation of indigenous peoples...", op. cit., p. 104.
[332] Aglukkaq, Leona, "The Arctic Council remains effective and strong." *The Globe and Mail*. April, 23, 2015. http://www.theglobeandmail.com/opinion/the-arctic-council-remains-effective-and-strong/article24072388/. Accessed April, 11, 2016.
[333] Ibidem.
[334] Koivurova, Timo and Leena Heinämäki, "The participation of indigenous peoples ...", op. cit., p. 101.
[335] Ibidem.
[336] Koivurova, Timo, "Limits and possibilities...", op. cit., p. 153.

statement by the IIPFCC reiterates the "need for recognition of our traditional knowledge, which we have sustainably used and practiced for generations; and the need to integrate such knowledge in global, national and sub-national efforts."[337] These efforts must focus on all issues, not only that of food security, but human security, climate change, and other challenges to Indigenous well-being. Kamrul Hossain suggests, "it is important that states, as the main authoritative actors having a vertical relationship with these various bodies, would need to make proper space for allocating the concerns addressed, and strategies proposed, by the latter, in their policy priorities within the national mechanisms in order to give human security framework a real meaning for their Indigenous Peoples."[338]

4.4 Hard law vs. soft law in the Arctic

Firstly, concerning hard-law in the Arctic, some suggest the creation of a treaty to govern the complete Arctic area, similarly to that of Antarctica. The reasons are many, but most likely to keep actors accountable concerning, human activities, climate change and all other threats to Indigenous rights and food security.

Koivurova recalls, the idea for an overarching Arctic treaty was pictured by Canada, to enable better coordination of the responses to climate change in the Arctic.[339] This was later expressed by Finland in their 2013 Arctic Strategy, where they document that, "institutionally, the Council's position has been strengthened by appointing a permanent secretariat; drafting binding international agreements between the Council Member States; producing research papers of major importance; and extending the Council's agenda from environmental aspects to issues related to policies, the economy and international law. Finland supports the plan to establish the Council as an international treaty-based organisation. (Emphasis added)."[340]

The Arctic Council has already become a facilitator for drafting internationally binding documents, the first being the 2011 Agreement on Cooperation on Aeronautical and Maritime Search and Rescue in the Arctic (SAR Agreement) and secondly, the 2013 Agreement on

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[337] IIPFCC, "IIPFCC Statement to SBI" Bonn, Germany. May, 12, 2015. http://www.indigenousclimate.org/index.php?option=comcontent& view= article&id=180%3Aiipfcc-statement-to-sbi&catid=3%3Anews&lang=es. Accessed. April, 4, 2016.

[338] HuSArctic, "Governance of human security of Arctic indigenous peoples necessitates states' affirmative actions, says Dr. Kamrul Hossain at ASSW 2015." http://www.husarctic.org/en/news/governance-human-security-arctic-indigenous-peoples-necessitates-states%E2%80%99-affirmative-actions-0. Accessed April, 13, 2016.

[339] Koivurova, Timo, "Increasing Relevance of Treaties: The Case of the Arctic." *American Society of International Law*, May, 6, 2014, https://www.asil.org/blogs/increasing-relevance-treaties-case-arctic-agora-end-treaties. Accessed April, 11, 2016.

[340] Ibidem.

Cooperation on Marine Oil Pollution Preparedness and Response in the Arctic. Both agreements consist of numerous binding obligations making them hard-law documents in the Arctic.

In terms of food security, many campaigns and suggestions to have brought forth the idea of an International Food Security Treaty.[341] The belief is that it is the surest way to end world hunger and to establish enforceable law, which would guarantee the right to be free from hunger and oblige countries to establish their own related national laws.[342] Currently, there is no treaty on the right to food anywhere in the world and the closest initiative would be these countries that have implemented the right to food into their national legislation and constitutions, but as seen through the above discussion this varies greatly and done at different extents. Therefore, the idea of an International Food Security Treaty or an Arctic-specific Food Security Treaty focused on the region would harmonize the division among national countries and could fill a number of gaps regarding the obligations of states. However, while such a hard-law treaty would be ideal for holding states accountable, some would argue otherwise and would likely be very hard to coordinate.

Koivurova and Heinämäki dissect that "over the course of some 30 years, a new method of creating international norms, known as soft law, has seemingly become institutionalised in international society."[343] Koivurova believes that "soft-law still plays a role in the Arctic, especially by complementing legal agreements, but also as a general cooperation forum giving political direction to the Arctic can remain a soft-law body, such as the Arctic Council."[344] It is undeniable that the Arctic Council is largely a soft-law body and has used this form of law for well over two decades. [345] Despite recent documents guided by the Council suggesting a movement towards functional legally binding agreements, Koivurova admits, "it would be a mistake to think that the Arctic Council could easily be turned into a treaty based body having regulatory powers."[346] Therefore, role of the Council as a soft-law body in the arctic has been an achievement in many ways and helped to bring further cooperation in the area.

Hasanat confirms there are two main explanations why soft law is often the chosen form: "1) the weakness of traditional sources in international law and 2) the growing involvement

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[341] International Human Rights Clinic, "End Hunger Through Law: An International Food Security Treaty." *Willamette University College of Law for the International Food Security Treaty Campaign.*
[342] Ibidem.
[343] Koivurova, Timo and Leena Heinämäki, "The participation of indigenous peoples...", op. cit., p. 103.
[344] Koivurova, Timo, "Increasing Relevance of Treaties: The Case of the Arctic." *American Society of International Law*, May, 6, 2014, https://www.asil.org/blogs/increasing-relevance-treaties-case-arctic-agora-end-treaties. Accessed April, 11, 2016.
[345] Koivurova, Timo and Leena Heinämäki, "The participation of indigenous peoples...", op. cit., p. 105
[346] Koivurova, Timo, "Limits and possibilities...", op. cit., p. 152.

of non-State actors in international cooperation."[347] Further explaining that, there is a shift by states towards soft-law mechanisms, as they are easier to deal with and do not have the same extensive obligations, but most importantly to maintain international cooperation.[348] In addition, it is recommended that soft law be used with international organisations to avoid a poor ratification record, such as the recent ILO Convention 169.[349] The growing participation of non-state actors is largely noticed, welcomed, and well respected; both in the Arctic and internationally. The participation of Indigenous actors in the Arctic is a large contribution to the soft-law mechanisms already in place. To emphasize this point, Koivurova and Heinämäki claim that, "the soft law method would seem to offer Indigenous Peoples more opportunities to influence the development of international norms than do the traditional law-making methods of international law."[350] These efforts are noticed through their increased contribution to soft-law mechanisms rather than traditional hard law methods. Koivurova and Heinämäki suggest further that, "this participation in the international norm-making process would be with a status other than that of regular NGO, which carries very limited rights of influence."[351] Important to mention, Indigenous are treated as NGOs in soft-law making, but the difference is understood through the Arctic Council where their chance of participating as something other than an NGO is quite higher than that of the treaty-making process.[352] The Arctic Council is a platform allowing Indigenous Peoples to work alongside governments to address the many issues they face. Due to the Council's soft-law principles, states could be more willing to work on granting the Indigenous Peoples a status that better reflects their status nationally.[353] Therefore, the hurdles faced by Indigenous Peoples tend to get noticed and projected into the international arena.

Hasanat sees the formation of soft-law as the first priority, because the creation of hard-law documents is time-consuming and they do not protect confidentiality.[354] Koivurova and Heinämäki view "the process in international law through soft law instruments and forms of co-operation as those waiting to become hard law, in the forms of treaty law or customary law,"[355] showing a linear progression. Once the soft-law soft law rules and principles become accepted in

[347] Hasanat, Waliul, "Definitional Constraints...", op. cit., p. 29.
[348] Ibidem, p. 32.
[349] Maupain, Francis, "International Labour Organization recommendations and similar instruments." Commitment and compliance: The role of non-binding norms in the international legal system (2000). *In: Hasanat, Waliul. "Definitional Constraints Regarding Soft Law." The Secretariat Asian-African Legal Consultative Organization, New Delhi, Vol3: 1 &2. March & June, 2007, p. 30.*
[350] Koivurova, Timo and Leena Heinämäki, "The participation of indigenous peoples...", op. cit., p. 104.
[351] Ibidem.
[352] Ibidem.
[353] Ibidem, p. 105.
[354] Hasanat, Waliul, "Definitional Constraints...", op. cit., p. 30.
[355] Koivurova, Timo and Leena Heinämäki, "The participation of indigenous peoples...", op. cit., p. 105.

international treaties then they have a true impact.[356] Therefore, I suggest that the starting point for food security discussions need to happen at the soft-law level, through the Arctic Council, long before they should be discussed in treaty negotiations. The use of soft law could allow for increased discussions on how to progress food security in the region. However, in order to advance Indigenous rights, such as the right to food and right to culture, they need to be developed into national legislation.

4.5 Food security in the Arctic: a way forward

Nowlan acknowledges that, "the special role given to Indigenous Peoples in the emerging Arctic legal regime does not exist elsewhere in the global environmental treaty system."[357] In such special roles, consideration must be done on the best way to incorporate the participation into other regimes, which could remain a topic for the Arctic Council.[358] This example best follows the transition of including Indigenous Peoples in all Arctic issues and at all stages of the process. Suggested by Koivurova and Heinämäki, "the Indigenous Peoples' movement has in fact explicitly referred to the Arctic Council as a model that could be used in other regions of the world."[359] Therefore, the unique system that is in place through the Arctic Council could be the best way to make Indigenous issues, such as food security, a global focus.

It is clear that from the above discussions, soft-law mechanisms must continue in order to govern the Arctic and create progressive policy. This is for the benefit for everyone involved, states prefer this method, Indigenous Peoples benefit immensely, and much more could be accomplished this way. Furthermore, if policy-making is to follow a linear progression, starting with a soft-law framework and moving towards binding agreements could be one way to initiate a treaty or similar obligatory measures on food security.

5. Gaps and Recommendations

- There is a lack of monitoring and measures placed on traditional foods in comparison to the standards of the food sold in national and international markets. This causes a serious health concern for most peoples involved.
- Gaps persist in the communication of findings related to traditional food contamination in Indigenous communities. Primarily due to the misunderstanding between traditional knowledge and scientific knowledge.

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[356] Ibidem.
[357] Nowlan, Linda, "Arctic legal regime...", op. cit., p. 53.
[358] Ibidem.
[359] Koivurova, Timo and Leena Heinämäki, "The participation of indigenous peoples...", op. cit., p. 105.

- A Failure to fully satisfy the right to food and the right to culture from the Indigenous perspective within some national legislations. Especially in assuring the both the individual and collective rights to food and culture.
- There are insufficient efforts to tackle food security, even though there are currently a number of mechanisms in place through a mix of hard and soft law, but they are not used to their full potential yet. Furthermore, efforts to create much more concrete mechanisms to fill the gaps are uncoordinated and occurring in different areas of the Arctic, where they do not cover the region as a whole.
- There needs to be added resources and efforts to mitigate climate change and other potential threats to food security, in such a way that Indigenous Peoples not need to rely on adaptation.
- The development of the right to food and the right to culture needs to be enhanced at the ground level and inside national jurisdiction, this is where the struggle remains the greatest.
- Indigenous participation is well noted in the Arctic, especially through the Arctic Council, but when dealing specifically with food security and well-being, there is no specific instrument focusing on the issue. Therefore, their participation in these matters are done indirectly through other working groups and mechanisms.
- Above all, there is no overarching framework fully protecting food in the Arctic, especially the traditional foods of Indigenous Peoples.

As noted above there are a number of gaps in current frameworks, mechanism, and instruments in place and aimed at further protect and promote food security in the Arctic. The current measures that we have in place are not sufficient enough to fully support and cater to the needs of Indigenous Peoples in the region. Therefore, I recommend that more must be done at the Arctic Council level in order to bring new light on the situation and properly promote food security across the Arctic and into national jurisdictions, through the use of a task force or working group on food security. The Council as a platform could potentially address and fill a number of the gaps listed above. The ability of the Council to promote Indigenous Peoples and their participation in the matters that affect them is unquestionable. Constructing food security as a priority within the Arctic Council could influence and pressure Arctic States to further fulfill the right to food and the right to culture, both individually and collectively.

A dedicated working group or task force, whichever is to come first, should be built in such a way that it provides studies, research and monitoring of food across the whole Arctic. This group must also effectively fill the void between traditional and scientific knowledge by possessing a full

understanding of communicating the findings of food contamination to Indigenous communities. This must be done in such a way that Indigenous Peoples can be assured that the food they are consuming is at a safe level in harmonization with their beliefs, cultures and traditions. This is to ensure that traditional foods still remain the first priority and healthiest option for Indigenous communities.

The efforts initiated by the Swedish Chairmanship must continue towards an effective strategy on food security through the support of a task force and pursued by a working group. This will allow the Arctic Council to remain influential in the Arctic regarding food security issues. Expectantly, such initiatives would lead to the creation of an overarching treaty or legally binding document to further protect and promote food security in the Arctic. First and foremost, the current gaps must be filled and current initiatives must progress much further.

6. Conclusion

Food security is a relatively young concept that has developed over the last few decades to bring further international attention and light on the discussion. There are four pillars that frame the food security model, availability, access, utilization and stability; without any one of these, an individual or group is deemed food insecure.

In the Arctic there are a wide range of threats that are constantly bombarding these four pillars and either directly or indirectly impacting the food security of Indigenous Peoples in the region. Some threats include climate change, mining, oil & gas, tourism, shipping, and forestry. Each one poses a unique challenge to the food security situation of Indigenous Peoples and largely depending on the circumstance and area of the Arctic. These threats have been recorded to having drastic impacts on Indigenous Peoples, especially on the contamination and reduction of food sources. This has initiated a significant shift across the Arctic from a reliance on traditional foods towards less-nutritious store-bought foods, leading to various health impacts on the Indigenous Peoples.

In order to counteract these threats a wide range of mechanisms have been developed, both hard and soft law, either directly or indirectly to address the challenges currently faced. Some that have been looked at in depth are UNCLOS, the CBD, UNFCCC and the Basel Convention. Each one has a unique and important role in protecting or promoting food security. Also, they cover a number of issues such as the mitigation of climate change, hazardous waste, transboundary pollution and ocean protection, but there are still gaps that remain.

A wide range of human rights are associated with food, but just two human rights are the primary focus in the Arctic Indigenous context, the right to food and the right to culture as an aspect of the right to food. A number of international instruments fully recognize and support the right to food, in both the individual and collective contexts, such as the ICCPR and the ICESCR. Through the above discussions, it is clear that the right to food is well established and implemented into some national jurisdictions, while obvious that others are clearly lacking. The right to food and the right to culture are intertwined from the Indigenous perspective, where culture and food are closely associated through food production and consumption. However, unlike the right to food, the right to culture is far less developed in comparison to other human rights. The right to culture is displayed primarily through ILO 169; however, it is not well received by states due to a low ratification record. In addition, this right is referenced in a number of soft-law instruments and guidelines such as, General Comment 12 and UNDRIP, but the effectiveness of such instruments are still to be determined. It is important that these rights are not overlooked, as recorded by the United Nations Department of Economic and Social Affairs, "the denial of one human right such as the right to food and means of subsistence, particularly for Indigenous Peoples, is the denial of all human rights including the rights to culture, development, identity and survival - the collective right to life as peoples. Our traditional knowledge is critical to that identity and survival.[360]

As regularly suggested above, the Arctic Council could be used as a platform to push and enhance the food security agenda in the Arctic further, primarily through soft law and the assistance of Indigenous Peoples, with the potential of extending into hard law. More importantly, the Indigenous Peoples' movement has in fact explicitly referred to the Arctic Council as a model that could be used in other regions of the world.[361] Therefore, the threats and challenges currently affecting Indigenous in the Arctic could shed light on the global food security situation, with the potential of bringing further changes to the current system.

[360] United Nations Department of Economic and Social Affairs, "International Workshop on Traditional Knowledge." Panama City, September, 21-23, 2005, PFII/2005/WS.TK/11, p. 10.
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